

NAME: MACDERMID INC
I.D. CTD001164599
FILE LOC. R-1B
OTHER: oversized [initials]

FACILITY WASTE MANAGEMENT PERMITS FOR

MacDermid, Inc.
526 Huntingdon Avenue
Waterbury, Connecticut 06708
EPA I.D. No. CTD001164599

RCRA RECORDS CENTER
FACILITY MacDermid
I.D. NO. CTD001164599
FILE LOC. R-1B
OTHER RDMS# 100829

CONSISTING OF:



RDMS DocID 00100829

THE HAZARDOUS WASTE MANAGEMENT PERMIT
(Resource Conservation and Recovery Act (RCRA) PART "B" Permit)

AND

THE 22a-454 PERMIT



STATE OF CONNECTICUT

DEPARTMENT OF ENVIRONMENTAL PROTECTION



CONNECTICUT HAZARDOUS WASTE PERMIT

Pursuant to Chapters 439 and 446k of the Connecticut General Statutes, a permit is issued to:

MacDermid, Inc.
526 Huntingdon Avenue
Bristol, Connecticut 06010

EPA I.D. No. CTD001164599
Town of Waterbury
DEP/HWM-151-028

to operate a hazardous waste treatment and storage facility located at 526 Huntingdon Avenue, Waterbury, Connecticut 06708 in accordance with Sections 22(a)-6 and 22a-449(c) of the Connecticut General Statutes as specified in the conditions and attachments set forth herein.

Connecticut's Hazardous Waste Management Regulations Sections 22a-449(c)-100 to 110 were published in the Connecticut Law Journal and became effective and enforceable on August 14, 1990. Therefore, all regulatory references to Connecticut Hazardous Waste Management Regulations sections 22a-449(c) 1 to 10 and 12 to 43 are hereby replaced by equivalent sections of the Regulations of Connecticut State Agencies ("RCSA") sections 22a-449(c)-100 to 110.

All terms used in the permit are as defined in Section 22a-449(c)-100 of RCSA or if not defined in Connecticut's Regulations as defined in Title 40 of the Code of Federal Regulations ("CFR") Parts 260 and 261; 262; 264; 266; 268; and 270.

This permit is based on the data found in the Part B permit application submitted to the Department of Environmental Protection and as contained herein. MacDermid's permit application consists of two volumes dated November 8, 1988, revised March 12 and May 11, 1990, as well as additional supplementary submittals dated April 17, May 8, May 24, and June 28, 1990; September 16, October 7, and 23, 1991; and February 17, April 10, June 16, and 23, May 26, and December 14, 1992; April 5, 16, and 30, and May 3, and 10, 1993.

The permittee must keep records of all data used to complete the permit application and any supplemental information submitted for the effective term of this permit. Any inaccuracies found in this data could lead to the termination, revocation and reissuance, or modification of this permit and/or civil or criminal enforcement action, depending on the nature of the inaccuracy.

Phone:

165 Capitol Avenue • Hartford, Connecticut 06106

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MacDermid, Inc.
CTD001164599
DEP/HWM-151-028

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This permit may be modified, or alternatively revoked and reissued, as provided for in 40 CFR 270.41 and to comply with any applicable standards issued or approved under Section 22a-449(c) of the Connecticut General Statutes if standards so issued or approved:

1. Contain different conditions or are otherwise more stringent than the permit; or
2. Control any material not controlled in the permit.

The permit as modified or reissued under this paragraph shall also contain any other requirements of the Statutes then applicable.

date

Deputy Commissioner
Environmental Protection

This permit shall become effective on _____ and shall expire
on _____.

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Section I

Standard Facility Conditions

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SECTION I

HAZARDOUS WASTE PERMIT

STANDARD FACILITY CONDITIONS

A. DESIGN AND OPERATION OF FACILITY:

The Permittee shall design, construct, maintain and operate the permitted container storage areas, the permitted tanks and all associated treatment and management areas associated with facility operations to minimize the possibility of a fire, explosion, or any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water which could threaten human health or the environment.

B. EFFECT OF PERMIT:

1. Compliance with this Permit during its term constitutes compliance, for purposes of enforcement, with Section 22a-449(c) of the Connecticut General Statutes (C.G.S). However, a permit may be modified, revoked and reissued, or terminated during its term for cause as set forth in Section 22a-449(c)-110 of the Regulations of Connecticut State Agencies (RCSA).
2. The issuance of this Permit does not authorize any injury to persons or property or invasion of other private rights, or any infringement of State or local law or regulations.

C. SEVERABILITY:

The provisions of this Permit are severable, and if any provisions of this Permit, or the application of any provisions of this Permit to any circumstances is held invalid, the application of such provisions to other circumstances and the remainder of this Permit shall not be affected thereby.

D. CONFIDENTIAL INFORMATION:

The Permittee may claim confidential any information required to be submitted by this Permit in accordance with Section 1-19 of the Connecticut General Statutes.

E. DUTIES AND REQUIREMENTS:

1. Duty to comply. The Permittee shall comply with all conditions of this Permit except that the Permittee need not comply with the conditions of this Permit to the extent and for the duration such non-compliance is authorized in an emergency permit issued pursuant to 40 CFR Part 270.61. Any permit non-compliance, except under the terms of an emergency permit, constitutes a violation of the appropriate Act and is grounds for enforcement action; for permit termination, revocation and reissuance or modification; or for denial of a permit renewal application.
2. Duty to reapply. If the Permittee wishes to continue an activity regulated by this Permit after the expiration date of this Permit, the Permittee shall apply for and obtain a new permit.
3. Need to halt or reduce activity not a defense. It shall not be a defense for a Permittee in an enforcement action that it would have been necessary to halt or reduce the Permitted activity in order to maintain compliance with the conditions of this Permit.
4. Duty to mitigate. In the event of noncompliance with this Permit, the Permittee shall take all reasonable steps to minimize releases to the environment, and shall carry out such measures as are reasonable to prevent significant adverse impacts on human health and the environment.
5. Proper operation and maintenance. The Permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the Permittee to achieve compliance with the conditions of this Permit. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training; and adequate laboratory and process controls, including appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems only when necessary to achieve compliance with the conditions of the permit.
6. Permit actions. This Permit may be modified, revoked and reissued, or terminated for cause. The filing of a request by the Permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated non-compliance, does not stay any permit condition.
7. Property rights. This Permit does not convey any property rights of any sort, or any exclusive privilege.

8. Duty to provide information. The Permittee shall furnish to the Commissioner, within a reasonable time, any relevant information which the Commissioner may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this Permit or to determine compliance with this Permit. The Permittee shall also furnish to the Commissioner, upon request, copies of records required to be kept by this Permit.
9. Inspection and entry. The Permittee shall allow the Commissioner, or an authorized representative, upon the presentation of credentials and other documents as may be required by law to:
 - a. Enter at reasonable times upon the Permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this Permit;
 - b. Have access to and copy at reasonable times, any records that shall be kept under the conditions of this Permit;
 - c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices or operations regulated or required under this Permit; and
 - d. Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by Statute, any substances or parameters at any location.
10. Monitoring and records. If required by law:
 - a. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. The method used to obtain a representative sample of the waste to be analyzed must be the appropriate method from Appendix I of 40 CFR Part 261. Laboratory methods must be those from "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", SW-846 most recent edition as referenced in 40 CFR Part 260.11 or by other appropriate EPA or DEP approved methods.
 - b. The Permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this Permit, the certification required by 40 CFR Part 264.73(b)(9), and records of all data used to complete the application for this Permit, for a period of at least 3 years from the date of the sample, measurement, certification or application. This period may be extended by request of the Commissioner at any time. The Permittee shall maintain records from all groundwater monitoring wells and associated groundwater surface elevations, for the active life of the facility, and for disposal facilities for the post-closure care period as well.

- c. Records for monitoring information shall include:
 - i. The date, exact place and time of sampling or measurements;
 - ii. The individual(s) who performed the sampling or measurements;
 - iii. The date(s) analyses were performed;
 - iv. The individual(s) who performed the analyses;
 - v. The analytical techniques or methods used; and
 - vi. The results of such analyses.
- 11. Signatory requirements. All applications, reports, or information submitted to the Commissioner shall be signed and certified pursuant to 40 CFR 270.11.
- 12. Reporting requirements.
 - a. Planned changes. The Permittee shall give notice to the Commissioner as soon as possible of any planned physical alterations or additions to the permitted facility.
 - b. Anticipated non-compliance. The Permittee shall give advance notice to the Commissioner of any planned changes in the permitted facility or activity which may result in non-compliance with Permit requirements.
 - c. Certification of construction. For a new facility, the Permittee may not treat, store or dispose of hazardous waste; and for a facility being modified the Permittee may not treat, store or dispose of hazardous waste in the modified portion of the facility, until:
 - i. The Permittee has submitted to the Commissioner by certified mail or hand delivery a letter signed by the Permittee and a registered professional engineer stating that the facility has been constructed or modified in compliance with the permit; and
 - ii. (A) The Commissioner has inspected the modified or newly constructed facility and finds it is in compliance with the conditions of the permit; or
(B) More than 15 days have elapsed since the date of submission of the letter in paragraph i. above, and the Permittee has not received notice from the Commissioner of his intent to inspect.
 - d. Transfers. This Permit is not transferable to any person except after notice to the Commissioner. The Commissioner may require modification or revocation and reissuance of the permits to change the name of the Permittee and incorporate such other requirements as may be necessary under Section 22a-449(c)-110 of RCSA and 40 CFR 270.40.
 - e. Monitoring reports. Monitoring results shall be reported at the intervals specified elsewhere in this Permit.

- f. Compliance schedules. Reports of compliance and non-compliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this Permit shall be submitted no later than 14 days following each schedule date.
- g. Twenty-four hour reporting:
- i. The Permittee shall report any non-compliance which may endanger health or environment orally within 24 hours from the time the Permittee becomes aware of the circumstances, including:
 - (A) Information concerning release of any hazardous waste that may cause an endangerment to public drinking water supplies.
 - (B) Any information of a release or discharge of hazardous waste or of a fire or explosion from the hazardous waste management facility, which could threaten the environment or human health outside the facility.
 - ii. The description of the occurrence and its cause shall include:
 - (A) Name, address, and telephone number of the owner or operator;
 - (B) Name, address, and telephone number of the facility;
 - (C) Date, time and type of incident;
 - (D) Name and quantity of material(s) involved;
 - (E) The extent of injuries, if any;
 - (F) An assessment of actual or potential hazards to the environment and human health outside the facility, where this is applicable; and
 - (G) Estimated quantity and disposition of recovered material that resulted from the incident.
 - iii. A written submission shall also be provided within 5 days of the time the Permittee becomes aware of the circumstances. The written submission shall contain a description of the non-compliance and its cause; the period of non-compliance including exact dates and times, and if the non-compliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the non-compliance. The Commissioner may waive the five day written notice requirement in favor of a written report within fifteen days.
- h. Manifest discrepancy report. If a significant discrepancy in a manifest is discovered, the Permittee shall attempt to reconcile the discrepancy. If not resolved within fifteen days, the Permittee shall submit a letter report, including a copy of the manifest, to the Commissioner as required by Section 22a-449(c)-104(a) of RCSA.

- i. Unmanifested waste report. This report shall be submitted to the Commissioner within 15 days of receipt of unmanifested waste as required by Section 22a-449(c)-104(a) of RCSA.
- j. Annual report. The Permittee must prepare and submit three copies of an annual report to the Commissioner by March 1 of each year. The annual report must be on EPA form 8700-13B. The report must cover facility activities during the previous calendar year and must include:
 - i. The EPA identification number, name, and address of the facility;
 - ii. The calendar year covered by the report;
 - iii. For off-site facilities, the EPA identification number of each hazardous waste generator from which the facility received a hazardous waste during the year; for imported shipments, the report must give the name and address of the foreign generator;
 - iv. A description of and the quantity of each hazardous waste the facility received during the year. For off-site facilities, this information must be listed by EPA identification number of each generator;
 - v. The method of treatment, storage, or disposal for each hazardous waste;
 - vi. The most recent closure cost estimate under section 264.142, and for disposal facilities, the most recent post-closure cost estimate under section 264.144;
 - vii. For generators who treat, store, or dispose of hazardous waste on-site, a description of the efforts undertaken during the year to reduce the volume and toxicity of waste generated;
 - viii. For generators who treat, store, or dispose of hazardous waste on site, a description of the changes in volume and toxicity of waste actually achieved during the year in comparison to previous years, to the extent such information is available for the years prior to 1984;
 - ix. The certification signed by the Permittee of the facility or his authorized representative; and
 - x. Any other information which the Commissioner specifies relating to the facilities activities.
- k. Other non-compliance. The Permittee shall report all instances of non-compliance not reported under paragraphs 12.e., f. and g. of this Section at the time monitoring reports are submitted. The reports shall contain the information listed in paragraph 12.g. of this Section.
- l. Other Information. When the Permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Commissioner, it shall promptly submit such facts or information.

- m. Computation of time. For the purpose of compliance with this Permit, computation of time periods shall be made by the methodology specified in 40 CFR Part 124.20.
- n. Submission of reports. Where this Permit requires the submission of written reports or notification to the Regional Administrator or Commissioner, the report or notification shall be deemed submitted on the post-marked date.
- o. Operating Records. (Waste Minimization) A certification by the Permittee no less often than annually, that the Permittee has a program in place to reduce the volume and toxicity of hazardous waste that he generates to the degree determined by the Permittee to be economically practicable; and the proposed method of treatment, storage or disposal is that practicable method currently available to the Permittee which minimizes the present and future threat to human health and the environment.
- p. Additional Requirements. Requirements not included in this Permit which becomes effective by Statute, or which may be adopted in Section 108 of the Regulations restricting the placement of hazardous waste in or on the land, or which may be adopted in other sections of these Regulations and not made specifically inapplicable to permitted facilities shall apply to such facilities. Notwithstanding this provision, a permit remains valid and enforceable, and the Permittee shall comply with the Permit and any such requirements. In the event of any conflict between the Permit and any such requirement, the Permittee shall comply with the more stringent requirement, provided that if the Permittee does not fully comply with the more stringent requirement, DEP or EPA may enforce either requirement.
- q. Federal and State Laws. Nothing in this Permit shall be construed to prohibit any Federal, State or political subdivision thereof from imposing any requirements to the extent authorized by law, including those for site selection, which are more stringent than those imposed by this Permit.

Section II

Permitted Areas, Activities, Capacities and Materials

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SECTION II

HAZARDOUS WASTE PERMIT

PERMITTED AREAS, ACTIVITIES, CAPACITIES AND MATERIALS

A. Permitted Areas, Activities and Facility Capacities

1. The permitted treatment and storage areas, tanks or units, and the processing or management areas or activities for hazardous wastes and co-stored other materials shall be limited to the locations shown on the figures identified below and as described herein.

The storage, treatment, processing or management of hazardous waste and co-stored other materials shall be limited to the locations shown on the figures included herein and as described herein.

- o For container storage: Figures 1, 2, 3, 4, 5, 6, 7, and 10;
 - o For tank storage: Figures 1, 8, 9, and 10;
- a. The initial receipt, off-loading, loading, and off-site shipment of containers of hazardous waste shall be limited to the following locations:
 - i. the Main Container Storage Area Loading/Unloading Dock;
 - ii. the East Aurora Street Loading/Unloading Area; and
 - iii. the Metal Hydroxide/Sulfide Sludge(Dewatered) Storage Area.
 - b. The initial receipt, tank storage, and loading/unloading of bulk shipments of hazardous waste and co-stored other materials shall be limited to the following locations:
 - i. the Bulk Loading/Unloading Area;
 - ii. the Main Container Storage Area Loading/Unloading Dock, when container contents are to be bulk loaded into a tank truck for shipment off-site; and
 - iii. the Waste Storage Tank Area.
 - c. The storage of hazardous wastes and co-stored other materials in containers shall be limited to the following locations:
 - i. the Main Container Storage Area;
 - ii. the Quality Control (QC) Area (waste staging area) Note: the maximum storage time shall not exceed 72 hours.;
 - iii. the Combustible Storage Area;
 - iv. the Flammable Material Storage Area; and
 - v. the Metal Hydroxide/Sulfide Sludge(Dewatered) Storage Area.

2. The Permittee shall maintain and operate the hazardous waste area(s) as shown on the figures included herein and as described herein.
 - o For container management activities: Figures 1, 2, 3, 4, 5, 6, 7, and 10;
 - o For tank management activities: Figures 1, 8, 9, and 10;
3. Permitted capacity:
 - a. Container storage areas:

The maximum container storage capacities for the five (5) locations identified below shall not exceed a total of 88,550 gallons of containerized liquid waste and 26 cubic yards of sludge(dewatered) waste.

 - i. Main Container Storage Area, the maximum capacity is 77,000 gallons.
 - ii. Quality Control (QC) Area (waste staging area), the maximum capacity is 6,380 gallons.
 - iii. Combustible Storage Area, the maximum capacity is 4,290 gallons.
 - iv. Flammable Material Storage Area, the maximum capacity is 880 gallons.
 - v. Metal Hydroxide/Sulfide Sludge(Dewatered) Storage Area, the maximum capacity is 26 cubic yards.
 - b. Tank systems:

The tank capacity for the four (4) tanks, identified below shall not exceed 29,000 gallons.

 - i. Tanks 1, 2, and 3, the maximum capacity for each tank is 8,000 gallons.
 - ii. Tank 4, the maximum capacity is 5,000 gallons.

NOTES: Capacities shall be based on the rated capacity of each container, tank or other device. Partially filled containers or tanks will be assumed full for the purpose of calculating total maximum capacities. Under no circumstance shall any container, tank or other device be operated in excess of its permitted capacity. Only the container types indicated in Table 1 shall be stored in the hazardous waste storage areas. The permitted maximum capacities and permitted waste streams for the regulated hazardous waste units and areas identified above are further defined in Tables 1, 2 and 3 included herein.

B. Chemical Management

1. Specific Prohibition

The following materials or categories of materials as defined below are prohibited from being treated, stored or processed in those areas identified in Section II.A.

- a. Compressed gasses and cryogenic materials, as defined in 49 Code of Federal Regulations (CFR) 173.300(a) and (f) respectively;
- b. Materials that are pyrophoric, defined as any material that ignites spontaneously;
- c. Shock sensitive materials, defined as materials that are readily capable of detonation or of explosive decomposition or explosive reaction at normal temperature and pressure and materials that are sensitive to mechanical or localized thermal shock at normal temperatures and pressures, including materials designated by National Fire Protection Association (NFPA) 704 Guideline as having a Reactivity Hazard rating of 4. (see NFPA 704, 1990 or most recent edition);
- d. Explosive materials, as defined in 49 CFR 173 Subpart C;
- e. Materials that have a Health Hazard rating of 4 as defined in NFPA 704, 1990 edition;
- f. Special Hazards: (These limitations apply per area, where applicable)
 - i. Liquid and Solid Oxidizing Materials, as defined in NFPA 43A;
Class 2 oxidizers in excess of 1,000 pounds,
Class 3 oxidizers in excess of 200 pounds,
Class 4 oxidizers in excess of 10 pounds.
 - ii. Organic Peroxide Formulations, as defined in NFPA 43B;
Class I organic peroxides,
Class II organic peroxides,
Class III organic peroxides in excess of 1,500 pounds,
Class IV organic peroxides in excess of 100,000 pounds.
 - iii. Gaseous Oxidizers, as defined in NFPA 43C.

2. Permitted Materials:

Subject to the provisions of Section II.B.1., the following materials are permitted to be managed in those areas identified in Section II.A.1.

- a. Hazardous wastes identified by U.S. EPA Hazardous Waste Number(s) (see Table 2) are permitted to be managed in the permitted areas identified in Section II.A.1. providing the Permittee first complies with Section II.B.2.b. Each hazardous waste storage area shall be utilized to store only the hazardous waste streams identified in Table 2.
- b. Co-stored other materials (e.g., commercial chemicals of technical, analytical or reagent grade, chemical intermediates, products, non-hazardous wastes and any chemical mixture), and hazardous wastes except where otherwise prohibited by this permit, (e.g., shock sensitive materials) may be managed in the permitted areas providing the Permittee first complies with the following:
 - i. Prior to placing into the permitted storage areas and/or permitted process tanks any hazardous wastes and co-stored other materials, the Permittee shall determine that the materials can be properly managed in accordance with the terms and conditions of this Permit. The Permittee shall ensure compliance with, at a minimum, the following conditions of this Permit: Section IV.B.15. for container management and IV.C.1. through 3. for tank management (secondary containment); Section V.C. Waste Analysis; the terms and conditions of this Permit specially designed for materials presenting a health hazard rating of 3 or higher; and other applicable requirements contained in NFPA standards and codes and applicable requirements of 22a-449(c)-100 to 110, Regulations of the Connecticut State Agencies (RCSA), and 40 CFR Parts 264-270. In addition, the Permittee shall:
 - (A) Demonstrate that the materials are not specifically prohibited by Section II.B.1., by obtaining the applicable degree of hazard for each material as defined in Attachment A, the Waste Analysis Plan.
 - (B) Obtain a characterization of each material for those parameters specified in the Waste Analysis Plan.
 - (C) Verify, using the procedures specified in the Waste Analysis Plan, that the material is compatible with all co-stored other materials.
 - (D) Demonstrate that the material is being stored in an appropriate container or tank and generally ensure that co-stored other materials are stored in appropriate containers or tanks when managed in the permitted areas.
 - (E) Demonstrate that the materials are compatible with the containment structure or other secondary containment device.

- (F) Verify that the Contingency Plan adequately addresses all potential hazards posed by the materials, including the suitability and compatibility of the materials with: protective clothing (e.g., boots, gloves, suits, etc.), availability of appropriate respirator protection and emergency response equipment, monitoring equipment (e.g., explosion detection equipment; vapor analyzers, Draeger tubes, etc.); and other relevant equipment and necessary response procedures.
 - (G) Maintain an MSDS or equivalent for all hazardous wastes and co-stored other materials approved for management in accordance with Section V.I.5. which shall be located with all necessary reference material as indicated in the Contingency Plan, to be used in the event of an incident requiring the implementation of the Contingency Plan.
- ii. The information used to make the demonstrations required by Section II.B.2.b.i. above, must be clearly documented in the Operating Record for, at a minimum, three years. Documentation of the chemical constituents managed must be maintained in the Operating Record until Closure of the facility.

TABLE 1

HAZARDOUS WASTE STORAGE AREAS:
PERMITTED STORAGE CAPACITIES AND CONTAINER TYPES

<u>Hazardous Waste Management Area</u>	<u>Container Type</u>	<u>Max. # of Container</u>	<u>Total Storage Area Capacity</u>
Main Container Storage Area	55-gal. drums and/or	1400	77,000 gallons
	330-gal. storage totes	20 (Total combined area capacity not to exceed 77,000 gallons)	
Quality Control (QC) (Waste Staging Area)	55-gal. drums and	80	6,380 gallons
	330-gal. storage totes	6	
Combustible Storage Area	55-gal. drums and	54	4,290 gallons
	330-gal. storage totes	4	
Flammable Material Storage Area	55-gal. drums	16	880 gallons
Metal Hydroxide/ Sulfide Sludge Area	26 yd ³ rolloff dumpster	1	26 yd ³
Bulk Tank Storage Area*	N.A.	N.A.	29,000 gallons

*See Table 3 for a breakdown of the capacities of the Bulk Tank Storage Area.

The Permittee may utilize five (5) gallon containers as outlined below provided the total storage area capacity is not exceeded.

- o Main Container Storage Area for Laboratory Apparatus;
- o Combustible Storage Areas for Waste Mixed Solvents - Chlorinated and Non-Chlorinated; and
- o Flammable Storage Area for Waste Mixed Solvents - Chlorinated and Non-Chlorinated, Acetone, and Methanol.

TABLE 2
PERMITTED WASTE STORAGE LOCATIONS

<u>Hazardous Waste Management Area</u>	<u>Permitted Waste Streams</u>	<u>EPA Waste Identification No.</u>
Main Container Storage Area and Quality Control (QC) (Waste Staging Area)	Copper Etchant	D002/D004/D007/D008
	Solder Conditioner	D002/D008
	Solder Stripper	D001/D002/D008
	Acid Zinc Solution	D002
	Cadmium Plating Solution	D002
	Acid Copper Solution	D002
	Palladium Solution	D002
	Waste Nickel Solution	D002
	Lead Fluoride Sludge	D008
	Laboratory Apparatus	D009
	Stannous Sulfate Solution	D002
Combustible Storage Area	Chelated Waste Cleaner	D002
	Vacuum Pump Oil/Inks	D001
	Waste Mixed Solvents, Non-Chlorinated	D001/F003/F005
	Waste Mixed Solvents, Chlorinated	D001/ F002

TABLE 2 (CONT.)

PERMITTED WASTE STORAGE LOCATIONS

<u>Hazardous Waste Management Area</u>	<u>Permitted Waste Streams</u>	<u>EPA Waste Identification No.</u>
Flammable Material Storage Area	Waste Mixed Solvents, Non-Chlorinated	D001/F003/F005
	Waste Mixed Solvents, Chlorinated	D001/ F002
	Acetone	U002
	Methanol	U154
Metal Hydroxide/ Sulfide Sludge Storage Area	Metal Hydroxide/Sulfide Sludge	F006
Bulk Tank Storage Area	Copper Etchant	D002/D004/D007/D008

TABLE 3

WASTE STORAGE TANK DIMENSIONS AND CAPACITIES*

<u>TANK #</u>	<u>TANK DIMENSIONS</u>	<u>STORAGE CAPACITY</u>
1	9'8" Diameter 14'6" High	8000 Gallons
2	9'8" Diameter 14'6" High	8000 Gallons
3	9'8" Diameter 14'6" High	8000 Gallons
4	10'0" Diameter 9'0" High	5000 Gallons

*See Tables 1 and 2 for a listing of the total storage area capacity, waste code numbers, and allowable waste streams which may be stored in the bulk tank storage area.

**US EPA New England
RCRA Document Management System
Image Target Sheet**

RDMS Document ID # 100829

Facility Name: MACDERMID INC

Facility ID#: CTD001164599

Phase Classification: R-1B

Purpose of Target Sheet:

☒ **Oversized (in Site File)** ☐ **Oversized (in Map Drawer)**

☐ **Page(s) Missing (Please Specify Below)**

☐ **Privileged** ☐ **Other (Provide Purpose Below)**

Description of Oversized Material, if applicable:

FIGURE 1: FACILITY LAYOUT

☒ **Map** ☐ **Photograph** ☐ **Other (Specify Below)**

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Purpose Below)**

Description of Oversized Material, if applicable:

FIGURE 2: MAIN CONTAINER STORAGE AREA

☒ **Map** ☐ **Photograph** ☐ **Other (Specify Below)**

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Description of Oversized Material, if applicable:

FIGURE 3: COMBUSTIBLE STORAGE AREA

☒ **Map** ☐ **Photograph** ☐ **Other** (Specify Below)

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Purpose Below)**

Description of Oversized Material, if applicable:

FIGURE 4: FLAMMABLE MATERIAL STORAGE AREA

☒ **Map** ☐ **Photograph** ☐ **Other (Specify Below)**

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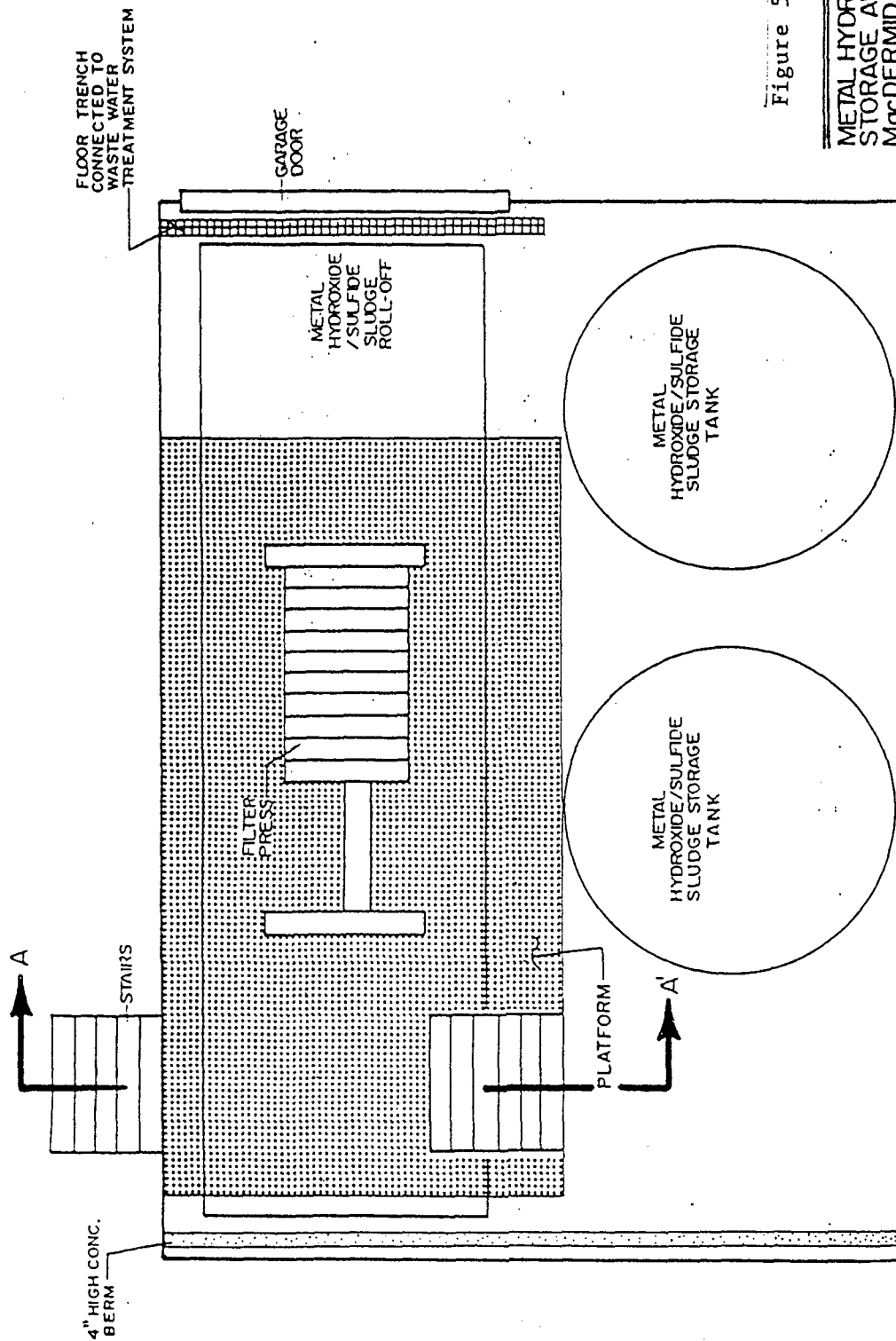


Figure 5

METAL HYDROXIDE/SULFIDE SLUDGE
STORAGE AREA
MacDERMID, INC.
526 HUNTINGDON AVE.
WATERBURY, CT.

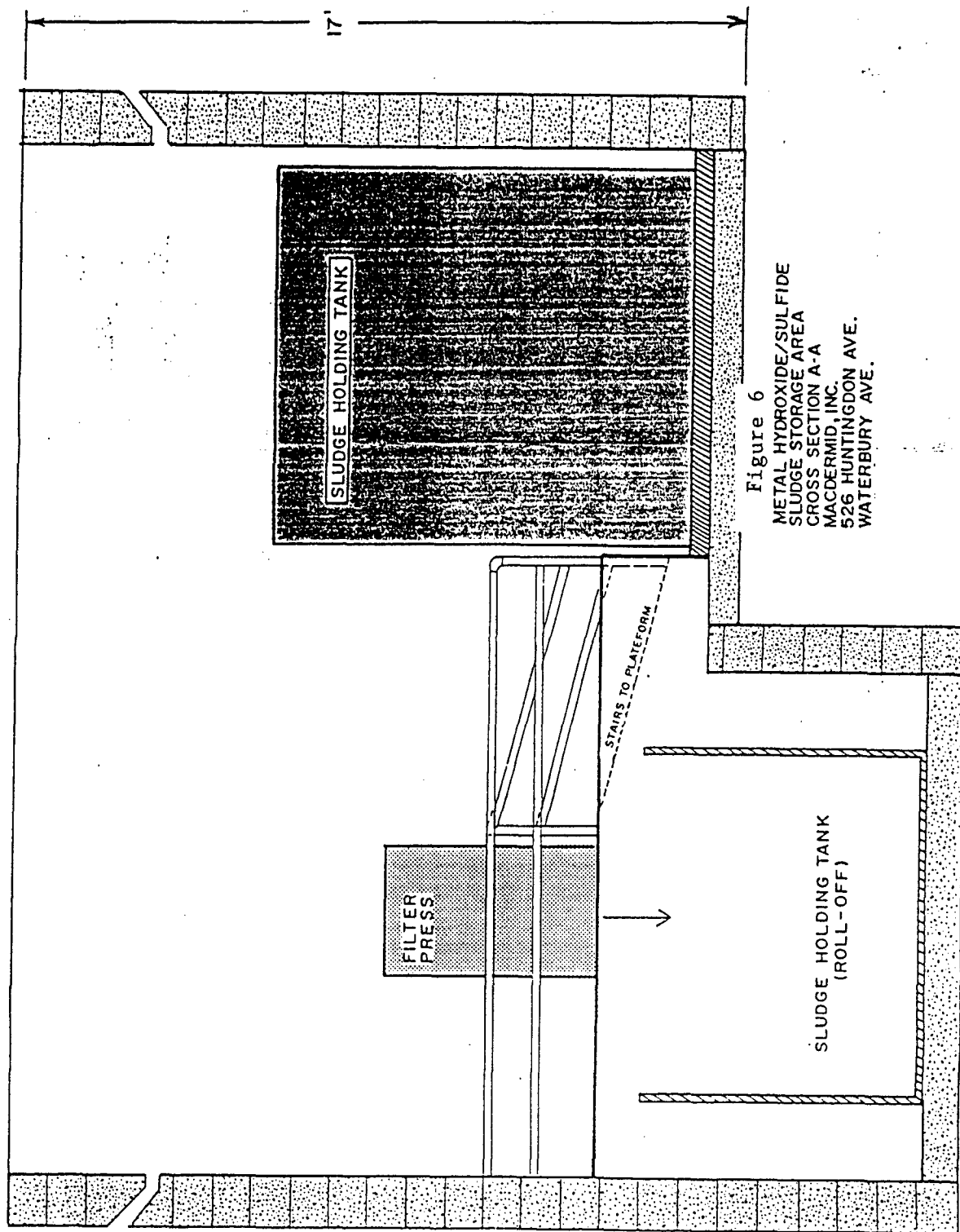


Figure 6
 METAL HYDROXIDE/SULFIDE
 SLUDGE STORAGE AREA
 CROSS SECTION A-A
 MACDERMID, INC.
 526 HUNTINGDON AVE.
 WATERBURY AVE.

**US EPA New England
RCRA Document Management System
Image Target Sheet**

RDMS Document ID # 100829

Facility Name: MACDERMID INC

Facility ID#: CTD001164599

Phase Classification: R-1B

Purpose of Target Sheet:

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☐ **Page(s) Missing** (Please Specify Below)

☐ **Privileged** ☐ **Other** (Provide
Purpose Below)

Description of Oversized Material, if applicable:

FIGURE 7: QUALITY CONTROL AREA

☒ **Map** ☐ **Photograph** ☐ **Other** (Specify Below)

*** Please Contact the EPA New England RCRA Records Center to View This Document ***

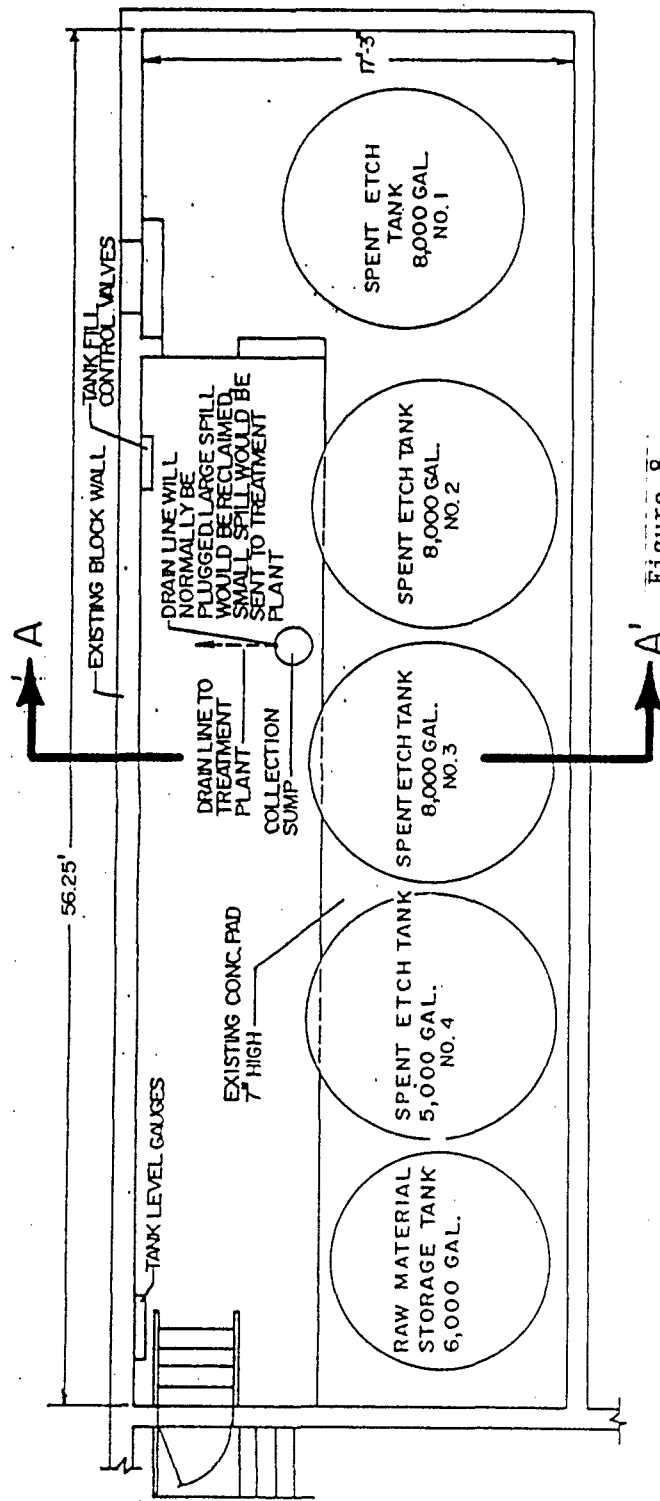


Figure 8
 WASTE STORAGE TANKS
 MAC DERMID, INC.
 526 HUNTINGDON AVE
 WATERBURY, CT

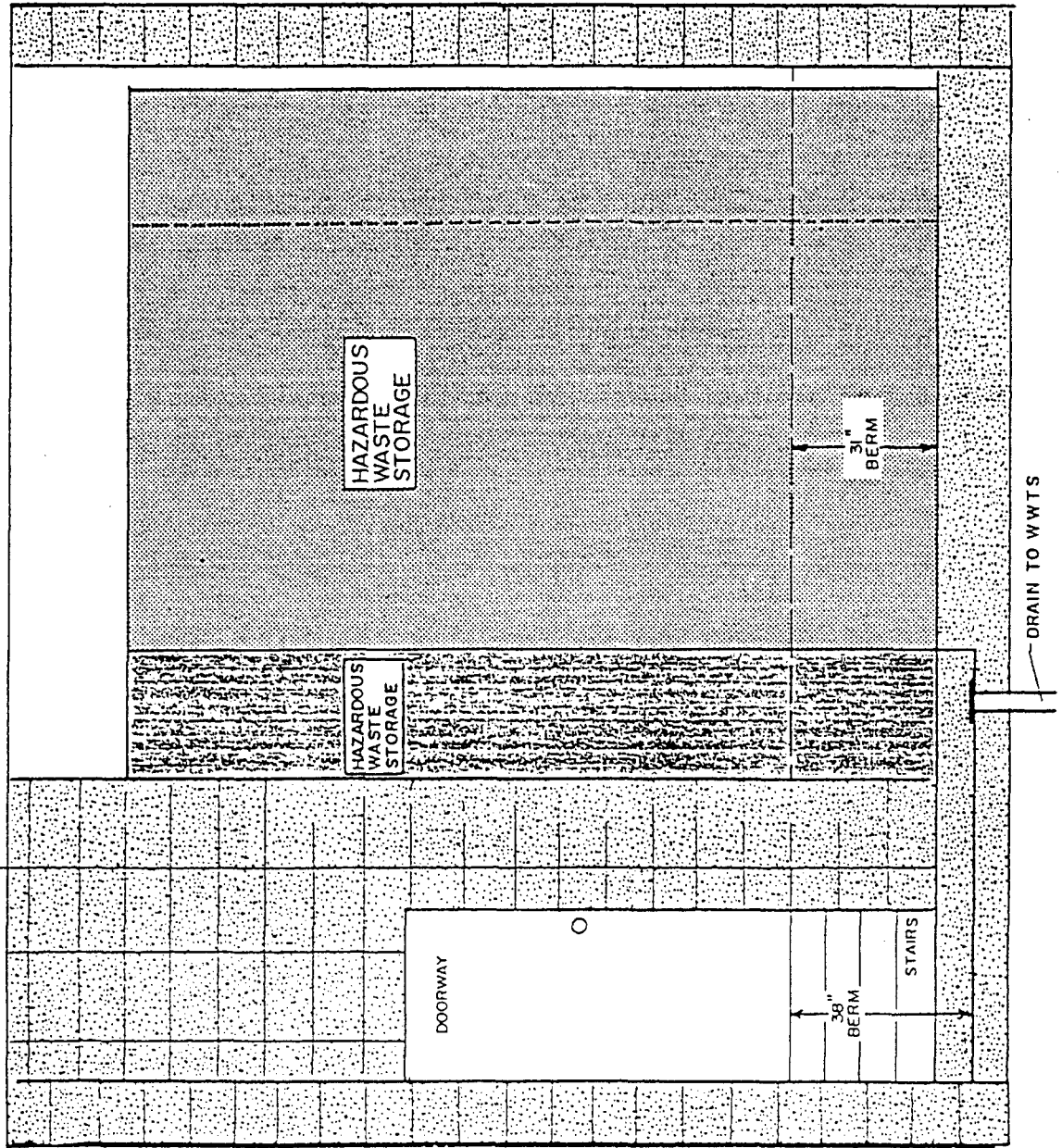


Figure 9
HAZARDOUS WASTE
STORAGE TANKS
CROSS SECTION A-A
MACDERMID, INC.
526 HUNTINGDON AVE.
WATERBURY, CT.
1/2" = 1'
MAC-0001.RC.

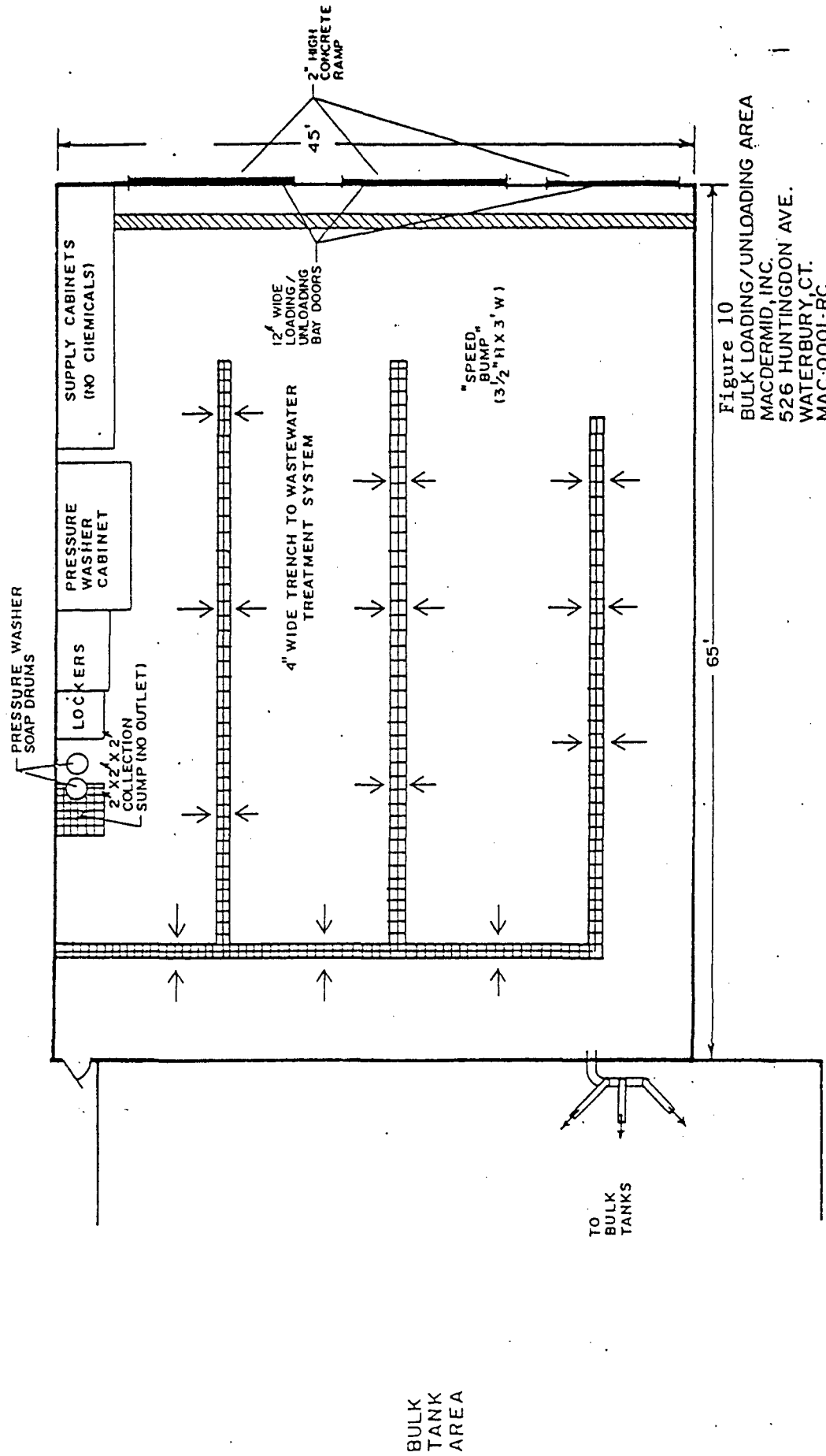


Figure 10
 BULK LOADING/UNLOADING AREA
 MACDERMID, INC.
 526 HUNTINGDON AVE.
 WATERBURY, CT.
 MAC-0001-RC
 N.T.S. B/R

SECTION III

HAZARDOUS WASTE PERMIT

COMPLIANCE SCHEDULE

Schedules of Compliance

I. MacDermid, Inc. shall take such actions as is necessary to:

1. Certify to the Commissioner that all applicable National Fire Protection Association (NFPA) requirements are being complied with regarding the storage and management of hazardous wastes and other materials within the permitted areas of the facility.

This certification shall include a detailed review and assessment report of applicable NFPA standards, such as but not limited to, NFPA 30, 101, 231, and 231C regarding the safe storage and management of materials within the permitted areas of the facility. The report shall be prepared and certified by a professional knowledgeable in the Connecticut Fire Safety Code. The certification must adequately assess compliance with such standards and requirements for the storage and management of all materials capable of being managed in the permitted areas. This certification shall also address such concerns as building design and construction, adequacy of design for fire protection, electrical, mechanical, venting and heating systems as applicable for the types of materials and operations to be conducted at the facility. The report shall outline the requirements of the codes being addressed and itemize compliance or non-compliance with each section of the applicable code.

2. Provide a revised form for the third-third land ban notification certification to comply with the regulatory requirements of 40 CFR Part 268.7. The revised form shall be identified as the "MacDermid Incorporated Customer Notification and Certification Land Disposal Restrictions Compliance" form.

II. MacDermid, Incorporated shall accomplish the above described requirements in accordance with the following schedule(s).

- A. On or before 30 days after issuance of this Permit certify in accordance with Section III.I.1. above, to the Commissioner that a professional knowledgeable in the Connecticut Fire Safety Code has been contracted with to provide a certification report of applicable NFPA standards.

- B. On or before 60 days after issuance of this Permit submit to the Commissioner the certification report for DEP review and written approval as required in Section III.I.1. above.
- c. On or before 30 days after issuance of this Permit submit to the Commissioner the revised "MacDermid Incorporated Customer Notification and Certification Land Disposal Restrictions Compliance" form for DEP review and written approval as required in Section III.I.2.

Section IV

Operating Conditions

<u>Section</u>	<u>Title</u>	<u>Page</u>
A.	Operating Conditions Applicable to: All Permitted Activities	1
B.	Operating Conditions Applicable to: Container Management Activities	9
C.	Operating Conditions Applicable to: Tank Management Activities	14

SECTION IV

HAZARDOUS WASTE PERMIT

OPERATING CONDITIONS

A. Operating Conditions Applicable to: All Permitted Activities

1. Containerized hazardous wastes and bulk shipments of hazardous waste shall not be received at the facility unless appropriately trained and duly designated personnel are present at the facility to ensure that the waste is properly manifested, inspected, tested, transferred, treated, stored, processed or otherwise managed.

At the time of hazardous waste receipt, and when preparing for shipment off-site, shipments of hazardous waste shall be inspected to ensure that the waste identification information corresponds with and identifies the waste received or shipped off-site, and that the manifest and/or other required documentation information is complete.

2. The Permittee shall utilize only the permitted, greater than ninety (90) day storage areas and permitted treatment and management areas and processing units for those operations/activities identified in Section II.A. when managing hazardous wastes received from off-site.
3. For hazardous wastes and co-stored other materials managed in the permitted areas having a hazard classification as defined in the National Fire Protection Association (NFPA) Guideline, 704, "Standard System for the Identification of the Fire Hazards of Materials", 1990 edition, which present a health hazard rating of 3, the Permittee shall mark each material container with a blue label. [Note: Use of the Hazardous Material Identification System (HMIS), shall meet this labeling requirement.] The presence of this blue label shall indicate that the Permittee shall perform the following requirements: [Note: The Solder Stripper waste stream, having a health hazard rating of 3, is exempt from compliance with the following requirements.]
 - a. Personnel shall wear appropriate personal protective equipment consisting of, at a minimum, respirator protection when: opening containers, tanks, or units or when managing materials in open containers, tanks or units, and shall require that employees utilize the buddy system (either directly or through visual contact or verbal communication with another employee) when performing these operations in the permitted hazardous waste management areas; and
 - b. Employees managing hazardous wastes and co-stored other materials in closed containers, tanks or units shall keep with them as part of their personal protective equipment an emergency escape pack (Note: this shall consist of, but may not be limited to, an appropriate respirator capable of protecting the employee(s) from the dangers of toxic mists, fumes, dust, or gases).

4. The Permittee shall verify the following requirements when managing organic peroxides:
 - a. That the chemical name is posted on the container, tank, or unit utilized to manage the organic peroxide; and
 - b. That the temperature range at which the material can be safely managed is identified and posted on the container, tank, or processing unit utilized to manage the organic peroxide.
5. The Permittee shall provide at all times a safe working environment for employees working in the permitted management areas. At a minimum, the Permittee shall address the following:
 - a. Adequate ventilation. Also, all venting systems shall be operational where applicable, prior to opening, sampling or otherwise managing open containers, tanks and units.
 - b. When sampling or opening containers, tanks and processing units and when working at open units, the Permittee shall ensure that appropriate Personnel Protective Equipment (PPE) as specified by, but not limited to, the Material Safety Data Sheets (MSDS's), or by NIOSH is utilized.
 - c. Area monitoring (e.g., utilization of gas detection equipment, detector tubes, etc.) for intermittent analysis of airborne concentrations of materials presenting a health hazard of 3 shall be performed as deemed appropriate by the Permittee.
 - d. When handling and managing (e.g., inspecting) closed containers, tanks and units of materials presenting a health hazard of 3 personnel shall utilize the buddy system or an escape pack as appropriate for the material.
6. The Permittee shall maintain and repair the traveled surfaces in all areas of operations, including the surfaces at and near the areas of operation and the on-site approaches to these areas to withstand the mechanical stresses of traffic to which they are subjected. See Section II.A.1. and 2. for permitted areas, and the maintenance and operating standards for the permitted areas, respectively. The surfaces must be maintained in sufficient condition to prevent spillage of and damage to hazardous waste containers during on-site transportation activities.

7. Hazardous wastes received from off-site shall be representatively sampled, as required in the Waste Analysis Plan, Attachment A. The representative samples shall consist of samples from each shipment as follows:

Drums or other batch waste: One sample from each container.

Tankers, vacuum trucks: One sample from each tank truck; for a vehicle with more than one compartment, a sample from each compartment unless each compartment contains identical wastes from the same facility's waste generating source.

For all hazardous wastes received on-site, accurate pre-acceptance waste characterization data in accordance with the Waste Analysis Plan must be available to verify the identity of the waste received.

8. The Permittee shall maintain inventory lists of all materials stored in the permitted areas, tanks, and units. Also, all materials presenting a health hazard of 3 being managed must be identified on specific inventory lists for these materials by area, tank and unit.
9. For each internal transfer of hazardous waste to or from a permitted hazardous waste management area, tank or unit the Permittee shall conduct the following procedures:
 - a. Verify that each waste stream has been characterized and that waste verification has been performed in accordance with the Waste Analysis Plan;
 - b. Utilize appropriate paperwork (e.g., transfer tickets, inventory logs, logs utilized to verify appropriate decontamination, etc.) in order to track each hazardous waste movement through the facility;
 - c. Utilize the laboratory analysis sheet to record the waste verification information required by the Waste Analysis Plan;
 - d. Verify prior to any hazardous waste transfer taking place that the appropriate paperwork accompanies the waste which grants transfer authorization and contains, at a minimum, the following information:
 - i. Manifest number of waste to be transferred, or the information which can be utilized to trace the material being transferred to the original material received from off-site or that information which identifies the on-site generator location.

- ii. U.S. EPA Hazardous Waste Number(s).
 - iii. Permitted areas to which and from which the material is to be transferred.
 - iv. Quantity of material to be transferred.
 - v. Signature or initials of the site technical personnel who has authorized the transfer and verified waste compatibility.
10. A record-keeping system which tracks wastes throughout the facility shall be maintained. This system should include tracking information as follows:
- a. Waste stream description and U.S. EPA Hazardous Waste Number;
 - b. Manifest number of wastes accepted at the facility;
 - c. Quantity of waste associated with a manifest;
 - d. Land ban waste codes applicable to each waste;
 - e. Compatibility information;
 - f. Quality control test data and information;
 - g. Quantity of waste accepted into a unit;
 - h. Type of waste management utilized for a specific waste stream;
 - i. Waste managed in each unit;
 - j. Tank used to manage a specific waste;
 - k. Date(s) of waste transfers within the facility;
 - l. An Off-specification Shipment Form or equivalent; and
 - m. An on-site waste transfer ticket.
11. Prior to the bulking, blending, stabilizing, solidifying, or other commingling of hazardous wastes and co-stored other materials, the Permittee shall conduct the waste verification and waste compatibility evaluation and/or testing described in Sections 2 and 4 of the Waste Analysis Plan herein included as Attachment A, and comply with Section V.C.3.
12. Except as provided in 40 CFR 268.50(d) and (e), the storage of hazardous wastes restricted from land disposal shall be subject to the following restrictions:
- a. The Permittee may store land-banned hazardous wastes solely for the purpose of the accumulation of such quantities of hazardous waste as necessary to facilitate proper recovery, treatment, or disposal;
 - b. Each container of land-banned hazardous waste shall be clearly marked to identify its contents and the date of accumulation; and
 - c. Each tank of land-banned hazardous waste shall be clearly marked with a description of its contents, the quantity of each hazardous waste received, and the date each period of accumulation begins, or such information for each tank shall be recorded and maintained in the Operating Record at the facility.

13. The storage of hazardous waste shall not exceed one year from the date the hazardous waste was placed into storage.
14. The Permittee shall maintain the berm and base of the permitted waste management areas such that they are free of cracks or gaps and sufficiently impervious to contain leaks, and spills until the collected material is detected and removed. The berm and the entire base of all permitted hazardous waste management areas shall be coated with Stonhard Stonclad HT epoxy coating or a DEP approved equivalent coating that is chemically resistant to the materials managed in that area. The applied sealant shall extend vertically at least to the height of the required secondary containment.
 - a. The application of the sealant shall be in conformance with the manufacturers specifications. Prior to applying the sealant, the Permittee shall inspect the area(s) for signs of visible residue. If visible residue is found the residue shall be removed in accordance with Section IV.A.21.b.
 - b. The coating must be re-applied as soon as possible, but no later than thirty (30) days after discovering that the integrity of the coating has been impaired due to wear, cracks, blistering, or other causes. Hazardous waste and co-stored other materials shall not be stored or managed in an area in which the integrity of the coating or containment area is impaired.
15. The Permittee shall maintain and operate all hazardous waste storage and treatment areas so as to prevent run-on of into the management areas and prevent spills and leakages in these areas from reaching and contaminating on-site soils, groundwater and surface water.
16. The Permittee shall maintain the valve of the collection sump in the Main Container Storage Area in the closed position. This valve shall only be opened once accumulated materials in the sump have been tested and the accumulated materials have been determined to be compatible with and can be treated by the facility wastewater treatment system, and the treatment is in compliance with the facility wastewater discharge permit.
17. Spilled or leaked materials shall be removed from the containment area(s), collection sumps, and catch basins immediately if it presents a threat to human health or the environment or should adequate secondary containment not be maintained. Otherwise the material shall be removed within twenty four (24) hours after detection.

18. Spilled or leaked material removed from the containment area(s) and catch basins shall either be (1) managed as a hazardous waste, unless it is demonstrated that the material is not a hazardous waste pursuant to 22a-449(c)-101 of the Regulations of Connecticut State Agencies (RCSA), or (2) treated in the facility's wastewater treatment system, provided that it is demonstrated that the material can be treated in compliance with the facility's wastewater treatment permit.
19. No aqueous hazardous waste shall be stored at a temperature below 32°F. If heating equipment is required in the Combustible Storage Area or Flammable Material Storage Area at any time to achieve compliance with this condition, such equipment shall be listed or approved for use in explosive atmospheres by Underwriters Laboratory, Inc., Factory Mutual, or some other nationally recognized testing laboratory.
20. The Permittee shall post fixed markings or signs in each Permitted management area clearly designating the location of each waste group of hazardous waste or co-stored other material being managed. Each sign or marking shall be secure, legible and clearly visible from a distance of twenty-five (25) feet.
 - a. Storage containers of hazardous wastes from a given hazardous waste compatibility group shall be separated from materials from a different RGN compatibility group (incompatible hazardous wastes and co-stored other materials) and protected from them by means of a dike, berm, wall, or other device.
 - b. Tanks and other processing units and management areas for hazardous wastes and co-stored other materials from a given material RGN compatibility group shall be separated from tanks, units, areas and materials from a different compatibility group or protected from them by means of a dike, berm, wall, or other device.
- 21.a. Prior to changing the material RGN compatibility group designation of a management area, tank or unit including all associated ancillary equipment the Permittee shall:
 - i. Remove all material from that area;
 - ii. Inspect the area for presence of visible residue;
 - iii. If visible residue is found, remove the residue by scrubbing and washing with the appropriate cleaning solutions described in Figure CS-1, or another appropriate cleaning solution;
 - iv. Post a new sign for that area pursuant to Section IV.A.20.;
 - v. Revise as necessary the appropriate maps, sketches, tables and/or appendices, etc., included in this Permit, and;

- vi. Record, on the appropriate inspection log, the following information:
 - (A) date and results of the inspection;
 - (B) name and title of person conducting the inspection;
 - (C) new management area material RGN compatibility group designation;
 - (D) name, date, title, and signature of the authorized person certifying that the area was free of visible residue prior to redesignating that area for a different material type.
- b. When a management area's chemical resistant impermeable secondary containment coating is in need of repair or re-application the Permittee shall:
 - i. Remove all material from that area;
 - ii. Inspect the area and area coating for damage and presence of visible residue;
 - iii. If visible residue is found, remove the residue by scrubbing and washing with the appropriate cleaning solutions described in Figure CS-1, or another appropriate cleaning solution;
 - iv. Record in the Operating Record the following information to be kept until Closure of the facility:
 - (A) the location of the area requiring repair;
 - (B) the type and degree of impairment to the floor and/or floor coating; and
 - (C) the method(s) of repair of the damaged floor and/or floor coating;
- v. Record, on the appropriate inspection log, the following information:
 - (A) date and results of the inspection;
 - (B) name and title of person conducting the inspection;
 - (C) management area material compatibility group designation;
 - (D) name, date, title, and signature of the authorized person certifying that the area coating/floor was adequately repaired, the method(s) of repair required to adequately coat the area and that the area was free of visible residue prior to recoating;

FIGURE CS-1
CLEANING SOLUTION

- DECON SOLUTION A - A Sodium bicarbonate solution.
- DECON SOLUTION B - A hypochlorite solution.
- DECON SOLUTION C - A solution capable of dissolving organics (e.g., Trisodium phosphate, Critraclean).
- DECON SOLUTION D - A dilute solution of hydrochloric acid (HCl).

<u>TYPE OF HAZARDOUS WASTE</u>	<u>PREFERRED DECONTAMINATION SOLUTION</u>
Inorganic acids, metal processing wastes.	A
Oily, greasy, unspecified wastes.	C
Inorganic bases, alkali, and caustic waste.	D
Pesticides, fungicides, chlorinated phenols.	B
Cyanides, and other non-acidic inorganic wastes.	B
Solvents and organic compounds, such as methylene chloride, and toluene.	C, A
Heavy metals, i.e., mercury, lead, cadmium.	A

22. The Permittee shall inspect the permitted hazardous waste management areas, the loading and unloading areas, the shipping and receiving areas, the bulk loading/unloading area and associated safety/emergency equipment in accordance with the Inspection Schedule incorporated herein as Attachment E and as modified herein.

[Note: Solder Stripper having a health hazard rating of 3 is exempt from the following requirements.] All quantities of materials presenting a health hazard of 3 which are managed in the permitted areas, tanks and units shall be inspected on a daily basis. These materials when managed in containers shall be placed on pallets when in storage. The Permittee shall inspect the exterior of, as well as beneath the palletized materials placed in storage for evidence of container damage and spills on a daily basis until the materials are shipped off-site. The results of the inspections of the materials present must be noted on a Daily Inspection Log.

23. The Permittee shall close the hazardous waste management area(s) in accordance with the Closure Plan, incorporated herein as Attachment C. The Clean-closure demonstration must document that any contaminants remaining after closure will not impact any environmental media including ground water, surface water and sediments, soils, or air in excess of recommended exposure limits or factors considering all potential routes of exposure. At a minimum, the closure performance standards for each hazardous constituent of concern must meet health risk-based standards for all exposure pathways.

B. Operating Conditions Applicable to: Container Management Activities

1. Under no circumstances may hazardous wastes be stored in the Quality Control (QC) Area (Waste Staging Area) for longer than seventy two (72) hours. Documentation shall be available for each container or for each shipment of containers of waste which will confirm that the containers have not exceeded this time limit. Also, hazardous wastes shall not be retained in this area after the required analytical evaluations have been completed.

In addition, the Permittee shall ensure that containers of hazardous waste do not remain in the Main Container Storage Area Loading/Unloading Dock, the East Aurora Street Loading/Unloading Area, or any other unpermitted area for longer than is necessary to properly load or unload the containers onto or off of over-the-road vehicles, and to transfer them to either the appropriate permitted storage area(s) or the appropriate off-site transportation vehicle(s).

2. The Quality Control (QC) Area (waste staging area) shall be managed in accordance with the following restrictions:
 - a. The Quality Control (QC) Area (waste staging area) shall be inspected in accordance with the facility Inspection Schedule and instructions for the Main Container Storage Area. The results of these inspections shall be entered in the inspection sheet entitled, "Warehouse-Reclaim Container Storage Area Inspection Log Sheet" (included in Attachment E), or an equivalent sheet.
 - b. The placement of containers in the Quality Control (QC) Area shall at all times allow for personnel access for inspection and emergency response.
 - c. 55-gallon capacity drums shall be stored on pallets; storage of drums on pallets shall not be stacked. The 330-gallon capacity circular storage totes shall not be stacked.
 - d. Containers shall not be placed within two (2) feet of the septic system's manhole containment berm.
 - e. Any materials handled or stored in this area and on the battery charger pads shall be subject to the requirements of: Section IV.A.20. for posting of signs for waste group designation and separation of incompatible wastes; Section IV.B.16. for secondary containment requirements; Section IV.B.18. for prevention of the placement of incompatible wastes in the same container and in unwashed containers; and Section V.G. for requirements for ignitable, reactive, or incompatible waste, and co-stored other materials.
3. The storage of containers in the Combustible Storage Area shall be restricted by the following conditions:
 - a. 330-gallon capacity storage totes shall not be stacked; and
 - b. 55-gallon capacity drums shall be stored on pallets and storage of drums on pallets shall be limited to two (2) tiers high.
4. The Permittee shall use a container made of or lined with materials which will not react with, and are otherwise compatible with the hazardous waste to be stored, so that the ability of the container to contain the waste is not impaired. Only containers which have been approved by the U.S. Department of Transportation (DOT), as specified in 49 CFR Parts 172 and 173, for use with a given hazardous waste are acceptable for storage and on-site transportation.
5. If a container holding hazardous waste is not in good condition (e.g., severe rusting, apparent structural defects, etc.) or if it begins to leak, the Permittee shall transfer the hazardous waste from this container to a container that is in good condition or manage the waste in some other way that complies with this Permit and the requirements of 22a-449(c)-100 to 110 of RCSA.

6. A container holding hazardous waste must always be closed during storage, except when it is necessary to add or remove waste or sample the contents of the container.
7. A container holding hazardous waste shall not be opened, handled or stored in a manner which may rupture the container or cause it to leak. In addition, for the waste stream identified as Solder Stripper the Permittee shall ensure that:
 - a. Containers received from off-site are properly vented as necessary upon receipt;
 - b. An appropriate vented cap (a DOT approved bung) in working condition is installed prior to the waste being placed into storage; and
 - c. Regular inspections are conducted to ensure that the containers of Solder Stripper in storage do not experience a build up in pressure and/or an expansion of the container such that it may cause the container to rupture or leak.
8. Drums holding hazardous waste or co-stored other materials stored or managed in the permitted container storage areas shall be stored or managed in accordance with 40 CFR Part 264.175(b)(2). The maximum stacking height of palletized drums shall be limited to two tiers high. Stacking heights for drums containing materials presenting a health hazard of 3 and ignitable materials shall be limited to one drum high.
9. The Permittee shall maintain compliance with all applicable provisions of the National Fire Protection Association (NFPA), Code 30 "Flammable and Combustible Liquids Code", 1990 edition or as revised. Provisions to be addressed include, but are not limited to, design, construction, and operation of separate inside storage areas, indoor storage provisions, and requirements for protected storage of liquids and fire control. The stacking heights, pile sizes and pile heights for flammable and combustible liquids shall be limited as defined in NFPA 30 or as otherwise identified by this Permit, whichever is more stringent. The maximum pile heights and maximum quantity per pile arranged as palletized and/or solid pile storage, shall comply with NFPA 30, Table 4-4.2.7 if unprotected or NFPA 30, Table 4-6.1(a) if protected in accordance with Section 4-6. Rack storage of containers of wastes or other materials shall be allowed and the storage heights of containers in rack systems shall comply with the applicable NFPA codes and standards.

10. The Permittee shall transport and otherwise manage drums on-site using fork lift trucks, hand trucks and/or other equipment capable of transporting or managing containers. The management of containers shall be performed only by personnel experienced and trained in the use of such equipment. The transfer of containers of hazardous waste within the facility shall not be performed on bare soil or other unprotected surfaces.
11. Prior to placing any container of hazardous waste into the hazardous waste storage areas, the container shall be visually inspected by the facility technical personnel or his/her designee (e.g., materials handler) to ensure that:
 - a. The wastes are in appropriate containers;
 - b. The waste container is properly labeled;
 - c. The waste container is not damaged or leaking;
 - d. The waste container is tightly closed;
 - e. The waste containers are accompanied by the appropriate paperwork, including manifests, analytical data as required by the facility Waste Analysis Plan, or other documents that may be required by regulation or by this Permit; and
 - f. the number and identity of containers matches the number and identity indicated on the manifest.If a discrepancy is found, this information must be reported to an immediate supervisor or an appropriate supervisor prior to further processing of the material.
12. The Permittee shall make allowances for the grounding of any drums of ignitable (i.e., flammable and combustible) materials stored, processed or managed at least during the addition and removal of wastes to and from containers.
13. The Permittee shall maintain sufficient aisle space to allow the unobstructed movement of personnel, drum handling equipment, fire protection equipment, spill control equipment, and decontamination equipment to all areas of the hazardous waste storage area operations in an emergency. Aisle space shall be maintained in accordance with this Permit and all applicable NFPA standards, whichever is more stringent.

The Permittee shall maintain aisle space between rows of containers not more than two containers wide in the hazardous waste storage areas. The required aisle space shall be a minimum of twenty-four (24) inches. Each individual container in each waste storage area shall be sufficiently accessible to allow for label examination, container inspection and shall be capable of being retrieved and relocated in an emergency.

14. Containers of materials presenting a health hazard of 3 which are managed in the permitted areas shall not exceed 55 gallons capacity per container.
15. The Permittee shall maintain each permitted area base as shown on the applicable Figure(s) referenced in Section II.A.2. and as described herein to provide adequate containment capacity. Each containment area base must be maintained in accordance with 40 CFR 264.175(b)(2). The base of each storage area and the collection sump or catch basin in that area shall not be obstructed in any manner which restricts or prevents the flow of liquids to the collection sump or catch basin.
16. The Permittee shall maintain and operate the containment system in the storage areas to ensure sufficient capacity to contain ten percent (10%) of the volume of all wastes or one hundred percent (100%) of the volume of the largest container, whichever is greater. Any device or structure creating negative containment volume (e.g., containers, equipment, pallets, etc., within the secondary containment zone) must be acknowledged and accounted for in the determination of the required secondary containment volume.
17. The Permittee shall maintain the container storage rack system in the container storage area so as to ensure that it is capable of supporting the theoretical maximum mass loading that it could be subjected to, taking into consideration the permitted capacity of the area, and the densities of the wastes stored. If any portion of a rack system should become damaged due to excessive wear, corrosion, physical damage, or structural failure, the Permittee shall remove all wastes from that portion of the rack system and suspend use of that portion until repairs are complete. Repairs shall be considered adequate if they at least restore the damaged portion of the rack to a strength and load bearing capacity capable of supporting the maximum theoretical mass loading it could be subjected to. A record shall be maintained of the rack system's maximum theoretical mass loading, and any repairs to or replacement of the rack system or its components.
18. The Permittee shall not place incompatible hazardous wastes, or incompatible hazardous wastes and co-stored other materials in the same container and shall not place hazardous waste in an unwashed container that previously held an incompatible hazardous waste or co-stored other material unless Attachment A, the Waste Analysis Plan, Section 4 is complied with.

C. Operating Conditions Applicable to: Tank Management Activities

1. Secondary containment systems for the treatment and storage tanks, process units and management areas must be:
 - a. Designed, installed, and operated to prevent any migration of wastes or accumulated liquid out of the system to the soil, ground water, or surface water at any time during the use of the tank system;
 - b. Capable of detecting and collecting released and accumulated liquids until the collected material is removed;
 - c. Maintained as shown on the applicable figures identified in Section II.A.2. and as described herein to provide adequate containment capacity; and
 - d. Maintained without obstructions which may in any manner restrict or prevent the flow of liquids to the collection sump or catch basin.
2. To meet the requirements of Section IV.C.1., secondary containment systems must be at a minimum:
 - a. Constructed of or lined with materials that are compatible with the wastes or other materials to be placed in the tank system or process unit and must have sufficient strength and thickness to prevent failure owing to pressure gradients (including static head and external hydrological forces), physical contact with the wastes or other materials to which it is exposed, climatic conditions, and the stress of daily operation (including stresses from nearby vehicular traffic).
 - b. Placed on a foundation or base capable of providing support to the secondary containment system, resistance to pressure gradients above and below the system, and capable of preventing failure due to settlement, compression, or uplift;
 - c. Provided with a leak-detection system that is designed and operated so that it will detect the failure of either the primary or secondary containment structure or the presence of any release of hazardous waste or accumulated liquid in the secondary containment system within 24 hours, or at the earliest practicable time if the Permittee can demonstrate to the Commissioner that existing detection technologies or site conditions will not allow detection of a release within 24 hours;

- d. Sloped or otherwise designed or operated to drain and remove liquids resulting from leaks, spills, or precipitation. Spilled or leaked waste and accumulated precipitation must be removed from the secondary containment system within 24 hours, or in as timely a manner as is possible to prevent harm to human health and the environment, if the Permittee can demonstrate to the Commissioner that removal of the released waste or accumulated precipitation cannot be accomplished within 24 hours;

[NOTE: If the collected material is a hazardous waste under 40 CFR Part 261, it is subject to management as a hazardous waste in accordance with all applicable requirements of 40 CFR Parts 262 through 265. If the collected material is discharged through a point source to waters of the United States, it is subject to the requirements of sections 301, 304, and 402 of the Clean Water Act, as amended, and chapter 446K of the general statutes, as amended. If discharged to a Publicly Owned Treatment Works (POTW), it is subject to the requirements of section 307 of the Clean Water Act, as amended and chapter 446K of the general statutes, as amended. If the collected material is released to the environment, it may be subject to the reporting requirements of 40 CFR Part 302.]

- 3. Secondary containment for tanks must include the following:
 - o A vault;
 - o An equivalent device as approved by the Commissioner.In addition to the requirements of 40 CFR 264.193(a), and Section IV.C.1., secondary containment systems must satisfy the following requirements as applicable to the facility:
 - a. Vault systems must be:
 - i. Designed or operated to contain 100 percent of the capacity of the largest tank within its boundary;
 - ii. Designed or operated to prevent run-on, precipitation or infiltration of precipitation into the secondary containment system unless the collection system has sufficient excess capacity to contain run-on, precipitation or infiltration. Such additional capacity must be sufficient to contain precipitation from a 25-year, 24-hour rainfall event. Any device or structure creating negative containment volume (e.g., equipment, etc. within the secondary containment zone) shall be acknowledged and accounted for in the determination of the required secondary containment volume. Spilled or leaked waste or accumulated precipitation shall be removed from the containment area(s) and catch basins immediately if it presents a threat to human health or the environment or adequate secondary containment can not be maintained, otherwise it shall be removed in a timely manner;

- iii. Constructed with chemical-resistant water stops in place at all joints (if any);
 - iv. Provided with an impermeable interior coating or lining that is compatible with the stored waste and that will prevent migration of waste into the concrete;
 - v. Provided with a means to protect against the formation of and ignition of vapors within the containment system, if the waste being stored or treated:
 - (A) Meets the definition of ignitable waste under 40 CFR Part 261.21; or
 - (B) Meets the definition of reactive waste under 40 CFR Part 261.21, and may form an ignitable or explosive vapor.
 - vi. Provided with an exterior moisture barrier or be otherwise designed or operated to prevent migration of moisture into the secondary containment system if the system is subject to hydraulic pressure.
- b. Ancillary equipment must be provided with secondary containment (e.g., trench, jacketing, double-walled piping) that meets the requirements of Section IV.C.2., except for:
- i. Aboveground piping (exclusive of flanges, joints, valves, and other connections) that are visually inspected for leaks on a daily basis;
 - ii. Welded flanges, welded joints, and welded connections, that are visually inspected for leaks on a daily basis;
 - iii. Sealless or magnetic coupling pumps and sealless valves, that are visually inspected for leaks on a daily basis; and
 - iv. Pressurized aboveground piping systems with automatic shut-off devices (e.g., excess flow check valves, flow metering shutdown devices, loss of pressure actuated shut-off devices) that are visually inspected for leaks on a daily basis.
- c. A variance from the requirements of secondary containment may be sought by the Permittee providing the Permittee follows the requirements set forth in 40 CFR 264.193 (g), (h) and (i) and receives written approval from the Commissioner regarding such a variance.
4. At the time of initial receipt, and when preparing for shipment off-site, bulk shipments of hazardous waste shall be inspected to ensure that they correspond with the identities indicated on the manifest, and that the manifests and other required documentation are complete. No shipment shall be sent off-site or received from off-site unless it matches the identity indicated on the manifest and is accompanied by all the required paperwork, including a properly executed manifest.

5. The Permittee shall maintain the tank trailer pads and bulk tank containment structures of the bulk loading/unloading areas so as to prevent run-on into the areas, and so as to prevent spills and leakages in the areas from reaching and contaminating on-site soils, groundwater and surface water. In addition, when the Main Container Storage Loading/Unloading Area is being used for the transfer and bulking of hazardous waste, the Permittee shall ensure that suitable spill collection equipment is utilized to prevent any spillage from the tank truck valves and associated equipment to the asphalt truck dock parking area.
6. If a tank holding hazardous wastes or other material is not in good condition (e.g., apparent structural defects) or if it begins to leak, the Permittee shall transfer the material from this tank to a tank or unit that is in good condition or manage the material in some other way that complies with this Permit and the requirements of 22a-449(c)-100 to 110 of RCRA.
7. The Permittee shall maintain sufficient floor space in the tank management areas to allow the unobstructed movement of personnel, equipment, fire protection equipment, spill control equipment, and decontamination equipment to all areas of the tank management area operations in an emergency. In addition, the Permittee shall comply with the applicable standards, requirements or codes and/or regulatory authority of the NFPA Standards and Codes and the town or state fire marshal, whichever is more stringent regarding tank design, location and tank separation distances.
8. The Permittee shall not place incompatible hazardous wastes, or incompatible hazardous wastes and other materials in the same tank, or in tanks located within a common secondary containment area, and shall not place hazardous waste in an unwashed tank or unit that previously held an incompatible hazardous waste or other material unless all applicable sections of this Permit, 40 CFR 264.198 and/or 264.199 and Attachment A, the Waste Analysis Plan, Section 4 are complied with.
9. Special requirements for:
 - a. Ignitable or reactive wastes:
Ignitable or reactive waste must not be placed in tank systems, unless the requirements of 40 CFR Part 264.198 are complied with.
 - b. Incompatible wastes:
 - i. Incompatible wastes, or incompatible waste and materials, must not be placed in the same tank system or in a tank system which shares the secondary containment area with other tank systems, process systems or units, unless 40 CFR Part 264.17(b) is complied with.

- ii. Hazardous waste must not be placed in a tank or process system that has not been decontaminated and that previously held an incompatible waste or material, unless 40 CFR Part 264.17(b) is complied with.
10. The Permittee shall maintain and operate the hazardous waste storage, process and management areas as identified in Section II.A.2. to prevent run-on into storage areas, to prevent spills and leaks in the areas from reaching and contaminating on-site soils, groundwater, and surface water, and as required by 40 CFR 264.193.
11. The Permittee shall maintain and repair the waste treatment and storage tanks, the process units and management areas and their foundations and appurtenant structures so as to ensure that the areas are capable of withstanding the maximum loading they will be subjected to without leakage or structural failure.
12. The Permittee shall maintain sight gages, high level alarms, and/or appropriate operator controls for the treatment and storage tanks so as to prevent overfilling and overtopping of these units.
13. For each internal transfer of hazardous waste or co-stored other material from the point of generation or other location to any storage tank, processing unit or management area, the Permittee shall:
 - a. Verify that, at a minimum and where applicable, each waste stream and other material has been characterized and verified in accordance with the Waste Analysis Plan and that the appropriate paperwork (e.g., the generator waste certification package, the waste report, or transfer tickets) has been utilized for each waste transfer.
 - b. Utilize the appropriate waste transfer documentation and ensure that prior to any transfer taking place documentation accompanies the waste which grants transfer authorization and contains at a minimum the following information:
 - o Manifest number of waste to be transferred where applicable, or information such as a waste stream number which can be utilized to track the material being transferred with the original material received from off-site or that information which identifies the on-site generator location;
 - o All applicable U.S. EPA Hazardous Waste Numbers;
 - o Facility treatment, storage or management area/unit to and from which the waste is to be transferred;
 - o Amount of material to be transferred; and
 - o Signature or initials of the site technical personnel who has authorized the transfer and verified waste compatibility.

- c. Verify that the tank which has been designated to receive the waste has adequate excess capacity to accept the delivery of waste.

If a discrepancy is found, this information must be reported to an appropriate immediate supervisor prior to any further processing of the material.

14. Inspections.

- a. The Permittee must inspect, where present, at least once each operating day:
 - i. Overfill/spill control equipment (e.g., waste-feed cutoff systems, bypass systems, and drainage systems) to ensure that it is in good working order;
 - ii. The aboveground portions of the tank system, if any, to detect corrosion or releases of waste;
 - iii. Data gathered from monitoring equipment and leak-detection equipment, (e.g., pressure and temperature gages, monitoring wells) to ensure that the tank system is being operated according to its design; and
 - iv. The construction materials and the area immediately surrounding the externally accessible portion of the tank system, including secondary containment structures (e.g., dikes) to detect erosion or signs of releases of hazardous waste (e.g., wet spots, dead vegetation).
- b. The Permittee must document in the Operating Record of the facility an inspection of those items in paragraph a. of this Permit condition.

15. General Operating Requirements.

- a. Hazardous wastes or treatment reagents must not be placed in a tank system if they could cause the tank, its ancillary equipment, or the containment system to rupture, leak, corrode, or otherwise fail.
- b. The Permittee must use appropriate controls and practices to prevent spills and overflows from tank or containment systems. These include at a minimum:
 - i. Spill prevention controls (e.g., check valves, dry disconnect couplings);
 - ii. Overfill prevention controls (e.g., level sensing devices, high level alarms, automatic feed cutoff, or bypass to a standby tank); and
 - iii. Maintenance of sufficient freeboard in uncovered tanks to prevent overtopping by wave or wind action or by precipitation.
- c. The Permittee must comply with the requirements of Section IV.C.16. if a leak or spill occurs in the tank system.

- d. As soon as waste begins to accumulate in a tank or tank system, the Permittee shall clearly label the tank or the tank system, whichever would be more conspicuous, with "Hazardous Waste" and other words which clearly identify the contents of the tank or tank system, such as the chemical name. If it is not possible to label the tank or tank system so that the label is conspicuous, then the area adjacent to the tank or tank system shall be labeled as prescribed above so that the identification of the contents is clearly visible for inspection.
16. Response to leaks or spills and disposition of leaking or unfit-for-use tank systems. A tank system or secondary containment system from which there has been a leak or spill, or which is unfit for use, must be removed from service immediately, and the Permittee must satisfy the following requirements:
- a. Cessation of use; prevent flow or addition of wastes. The Permittee must immediately stop the flow of hazardous waste into the tank system or secondary containment system and inspect the system to determine the cause of the release.
 - b. Removal of waste from tank system or secondary containment system.
 - i. If the release was from the tank system, the Permittee must, within 24 hours after detection of the leak or, if the Permittee demonstrates to the Commissioner and the Commissioner agrees that it is not possible, at the earliest practicable time, remove as much of the waste as is necessary to prevent further release of hazardous waste to the environment and to allow inspection and repair of the tank system to be performed. The Permittee shall make all reasonable efforts to mitigate the effects of the release.
 - ii. If the material released was to a secondary containment system, all released materials must be removed within 24 hours or in as timely a manner as is possible to prevent harm to human health and the environment.
 - c. Containment of visible releases to the environment. The Permittee must immediately conduct a visual inspection of the release and, based upon that inspection:
 - i. Prevent further migration of the leak or spill to soils or surface waters; and
 - ii. Remove, and properly dispose of, any visible contamination of the soil or surface water.

d. Notification reports.

- i. Any release to the environment must be reported to the Commissioner immediately upon its detection. Any release that has been reported to the National Response Center pursuant to 40 CFR Part 302, must still be reported separately to the Commissioner using the 24-hour Emergency Spill Response telephone number at (203) 566-3338 or, if that number is incorrect, the telephone number listed for Emergency Spill Response with the telephone company.
- ii. Within 15 days of detection of a release to the environment, a report containing the following information must be submitted to the Commissioner:
 - (A) Likely route of migration of the release;
 - (B) Characteristics of the surrounding soil (soil composition, geology, hydrogeology, climate);
 - (C) Results of any monitoring or sampling conducted in connection with the release (if available). If sampling or monitoring data relating to the release are not available within 15 days, these data must be submitted to the Commissioner as soon as they become available.
 - (D) Proximity to downgradient drinking water, surface water, and populated areas; and
 - (E) Description of response actions taken or planned.

e. Provision of secondary containment, repair, or closure.

- i. Unless the Permittee satisfies the requirements of paragraphs e.ii. through e.iv. of this section, the tank system must be closed in accordance with 40 CFR Part 264.197 and the facility Closure Plan.
- ii. If the cause of the release was a spill that has not damaged the integrity of the system, the Permittee may return the system to service as soon as the released waste is removed and repairs, if necessary, are made.
- iii. If the cause of the release was a leak from the primary tank system into the secondary containment system, the system must be repaired prior to returning the tank system to service.
- iv. If the source of the release was a leak to the environment from a component of a tank system without secondary containment, the Permittee must provide the component of the system from which the leak occurred with secondary containment that satisfies the requirements of 40 CFR Part 164.193 before it can be returned to service, unless the source of the leak is an aboveground portion of a tank system that can be inspected visually.

If the source is an aboveground component that can be inspected visually, the component must be repaired and may be returned to service without secondary containment as long as the requirements of paragraph f. of this section are satisfied. If a component is replaced to comply with the requirements of this Permit condition, that component must satisfy the requirements for new tank systems or components in 40 CFR Parts 264.192 and 264.193. Additionally, if a leak has occurred in any portion of a tank system component that is not readily accessible for visual inspection (e.g., the bottom of an inground or onground tank), the entire component must be provided with secondary containment in accordance with 40 CFR Part 264.193 prior to being returned to use.

- f. Certification of major repairs. If the Permittee has repaired a tank system in accordance with paragraph e. of this Permit condition, and the repair has been extensive (e.g., installation of an internal liner; repair of a ruptured primary containment or secondary containment vessel), the tank system must not be returned to service unless the Permittee has obtained a certification by an independent, qualified, registered professional engineer in accordance with 40 CFR Part 270.11(d) that the repaired system is capable of handling hazardous wastes without release for the intended life of the system. This certification must be submitted to the Commissioner within seven (7) days after returning the tank system to use.

Section V

General Facility Conditions

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SECTION V

HAZARDOUS WASTE PERMIT

GENERAL FACILITY CONDITIONS

A. Imminent Hazard Actions

Notwithstanding any provision of this Permit, enforcement actions may be brought pursuant to Section 7003 of RCRA, Section 22a-6 of the Connecticut General Statutes, or any other applicable law, when the Commissioner of the DEP or the Regional Administrator of EPA is in receipt of evidence that the handling, storage, or treatment of any hazardous waste may present an imminent and substantial endangerment to health or the environment.

B. Required Notices

1. The Permittee of a facility that has arranged to receive hazardous waste from a foreign source must notify the Commissioner of DEP in writing at least four weeks in advance of the date the waste is expected to arrive at the facility. Notice of subsequent shipments of the same waste from the same foreign source is not required.
2. Prior to receiving hazardous waste from an off-site source (except where the Permittee is also the generator), the Permittee shall inform the generator in writing that he has the appropriate permit(s) for, and will accept the waste the generator is shipping. The Permittee must keep a copy of this written notice as part of the Operating Record.
3. Before transferring ownership or operation of a facility during its operating life, the Permittee shall notify the new owner or operator in writing of the requirements of 40 Code of Federal Regulations (CFR) Parts 270 and 264, and of the Regulations of Connecticut State Agencies (RCSA).

[Comment: The Permittee's failure to notify the new owner or operator of the requirements of this Permit in no way relieves the new owner or operator of his obligation to comply with all applicable requirements.]

C. Waste Analysis

1. The Permittee shall follow the procedures described in the attached Waste Analysis Plan, incorporated herein as Attachment A.

2. The Permittee shall keep the Waste Analysis Plan at the facility at all times until final Closure of the facility.
3. The Permittee shall maintain generator data sheets in the Operating Record and copies of all information required to demonstrate compliance with the Waste Analysis Plan. This specifically includes, but is not limited to:
 - a. Waste characterization and verification of each waste stream as required by Sections 1 and 2 of the Waste Analysis Plan, utilizing the following as applicable:
 - i. the generator waste certification package for off-site customers; a waste report for off-site MacDermid facilities; and/or the waste tracking documentation for on-site wastes; and all ancillary documents as necessary to ensure that the information being submitted is accurate, up to date, and accurately documented;
 - ii. the laboratory analysis sheet, (NOTE: this waste verification analysis/evaluation shall be conducted by the receiving facility prior to managing the waste);
 - iii. the land disposal restriction notification as applicable; and
 - iv. a copy of the manifest shall be kept with the waste analysis.
 - b. Compatibility testing as required by Section 4 of the Waste Analysis Plan.
 - c. Degree of Hazard determination as required by Section 5 of the Waste Analysis Plan.
4. The Permittee shall at all times have available for inspection and review by CT DEP or EPA copies of all forms, procedural documents, manuals, etc., used to achieve compliance with the Waste Analysis Plan.
5. Unless otherwise specified in the Waste Analysis Plan, all waste characterization and analytical work performed in accordance with the facility Waste Analysis Plan shall be as specified in the EPA document SW-846, "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", most recent edition, or by other EPA or DEP approved methods.
6. In addition to the circumstances indicated in the Waste Analysis Plan, hazardous wastes received from off-site shall be re-characterized whenever an unexpected reaction, fume generation, or other significant process upset occurs in the recycling operation.

D. Security

1. The Permittee shall prevent the unknowing entry, and minimize the possibility for the unauthorized entry, of persons or livestock onto the active portion of its facility.
2. The Permittee shall conduct the following activities:
 - a. All entrances to the Huntingdon Avenue facility must be locked at all times unless personnel are present;
 - b. Access to the facility hazardous waste storage areas shall be limited to the emergency coordinators, security personnel or other authorized personnel;
 - c. Signs bearing the legend, "Danger - Unauthorized Personnel Keep Out", shall be posted at each entrance to each hazardous waste treatment and storage area and at other locations in sufficient numbers to be seen from any approach to these storage areas. The legend shall be written in English and shall be legible from a distance of at least 25 feet; and
 - d. The Permittee shall maintain all security systems in good repair throughout the active life of the facility.

E. General Inspection Requirements

1. The Permittee shall inspect his facility for malfunctions and deteriorations, operator errors, and discharges which may be causing or may lead to:
 - a. Release of hazardous waste constituents to the environment, or
 - b. A threat to human health.

The Permittee shall conduct these inspections often enough to identify problems in time to correct them before they harm human health or the environment.

2. The Permittee shall follow the Inspection Schedule incorporated herein as Attachment E and as may be modified herein. The Permittee shall remedy any deterioration or malfunction of equipment or structures which the inspection reveals on a schedule which ensures that the problem does not lead to an environmental or human health hazard. Where a hazard is imminent or has already occurred, remedial action must be taken immediately.
3. The Permittee shall keep the Inspection Schedule at the facility at all times.

4. Records of inspections shall be kept as required by 40 CFR 264.15(d), and shall contain such information and shall be on such forms as prescribed by Attachment E of this Permit. These records must be kept for at least three years from the date of the inspection.

F. Personnel Training

1. The Permittee shall conduct personnel training as required by 40 CFR 264.16. This Training Program shall follow the outline incorporated herein as Attachment D, and as modified herein. Specific modifications to the Training Program shall include the following:
 - a. All personnel who obtain samples of hazardous waste or co-stored other materials that are required by this Permit shall be properly trained in the appropriate sampling methods and sample handling procedures described in EPA Publication SW-846;
 - b. All personnel who conduct analyses of samples of hazardous waste or co-stored other materials that are required by this Permit shall be properly trained in the appropriate analytical procedures specified by the Waste Analysis Plan (Attachment A); and
 - c. The Training Program shall specifically provide instruction to employees on the hazardous wastes and co-stored other materials presenting a health hazard rating of 3 or higher and shall, at a minimum, emphasize: the hazards associated with such materials, the selection and use of proper personnel protection equipment for such materials, the appropriate safe handling practices for these materials, and the specific material identification procedures.
2. Facility personnel must successfully complete the Training Program outlined by Attachment D and as modified herein within six (6) months after the effective date of their employment or assignment to a facility, or to a new position at the facility, whichever is later. Employees must not work in unsupervised positions until they have completed the Training Program.
3. Facility personnel shall take part in an annual review of the training as specified in Attachment D.
4. The Permittee shall maintain the following documents and records at the facility in accordance with 40 CFR 264.16(d):
 - a. The job title for each position at the facility related to hazardous waste management, and the name of the employee filling each job;

- b. A written job description for each position listed under Section V.F.4.a. above. This description may be consistent in its specification of descriptions for other similar positions in the same company location or bargaining unit, but must include the requisite skill, education, or other qualifications, and duties of employees assigned to each position;
 - c. A written description of the type and amount of both introductory and continuing training that will be given to each person filling a position listed under Section V.F.4.a. above; and
 - d. Records that document that the training or job experience required by 40 CFR 264.16(a), (b), and (c) and specified in Attachment D has been given to, and completed by, facility personnel.
5. The Permittee shall keep training records on current personnel until Closure of the facility, and training records on former employees for at least three (3) years from the date the employee last worked at the facility. Personnel training records may accompany personnel transferred within the same company.
6. The training director shall be a person who is trained in hazardous waste management and who is capable, through a combination of training and experience, of properly training facility employees in all facets of hazardous waste handling, and storage in accordance with Attachment D.
7. The Training Program shall provide instruction to employees on any hazardous wastes and co-stored other materials which have an NFPA 704 Health and Reactivity Hazard ratings of 3 and 4 and shall at a minimum address the hazards associated with these wastes and materials, include information regarding and the use of proper personnel protective equipment, safe handling practices, and material identification.
8. Training topics for workers shall include types of labels used for wastes and other materials including training on special labels for any materials presenting a health hazard rating of 3 or higher.
9. Training on emergency response procedures shall be provided to personnel regarding specific control measures to protect against any materials presenting a health hazard rating of 3 or higher and routes of exposure associated with the release of any such materials. Training shall also include, at a minimum, relevant technical information regarding any such materials as well as the health hazards of any such materials.

G. General Requirements for Ignitable, Reactive, or Incompatible Waste, and Co-stored Other Materials

1. The Permittee shall take precautions to prevent accidental ignition or reaction of ignitable or reactive waste and such co-stored other materials. These wastes and co-stored other materials must be separated and protected from sources of ignition or reaction including but not limited to: open flames, smoking, cutting, welding, hot surfaces, frictional heat, sparks (static, electrical, or mechanical), spontaneous ignition (e.g. from heat producing chemical reactions), and radiant heat. All open flames, cutting, and welding within the proximity of the hazardous waste storage areas shall be allowed only with the approval and under the direct supervision of the Compliance Administrator or Emergency Coordinator. While ignitable or reactive waste and such co-stored other materials are being stored, handled, or otherwise managed the Permittee must confine smoking and open flames to especially designated locations. Containers holding ignitable, or reactive wastes and such co-stored other materials stored in a hazardous waste storage area must be located at least 15 meters (50 feet) from the facility property line. "No Smoking" signs must be conspicuously placed in the hazardous waste storage areas and wherever there is a possible hazard from ignitable or reactive waste and such co-stored other material.
2. The Permittee shall take precautions to prevent reactions which:
 - a. Generate extreme heat or pressure, fire or explosions, or violent reactions;
 - b. Produce uncontrolled toxic mists, fumes, dusts, or gases in sufficient quantities to threaten human health or the environment;
 - c. Produce uncontrolled flammable fumes or gases in sufficient quantities to pose a risk of fire or explosion;
 - d. Damage the structural integrity of the devices or facility; and
 - e. Through other like means, threaten human health or the environment.

H. Preparedness and Prevention

1. The Permittee shall design, construct, maintain, and operate the facility to minimize the possibility of a fire, explosion, or any unplanned, sudden or non-sudden release of hazardous waste or hazardous waste constituents to air, soil, or surface water which could threaten human health or the environment.
2. The Permittee shall equip the facility with, at a minimum, the emergency equipment specified in Table 10.2 and Figure 10.1 of the facility Contingency Plan, herein included as Attachment B.

3. The Permittee shall maintain and test (where appropriate), in order to assure proper operation in time of emergency, all facility communications or alarm systems, fire protection equipment, spill control equipment, and decontamination equipment. The Permittee must, at the minimum, adhere to the specific inspection schedules included in Attachment E, Inspection Schedule for the frequency of inspection for those items noted above.
4. The Permittee shall ensure that whenever hazardous waste and co-stored other material is being poured, mixed, sampled or otherwise handled, within the permitted hazardous waste treatment or storage areas, all personnel involved in the operation must have immediate access to an internal alarm or emergency communication device, either directly or through visual or verbal communication with another employee.

If there is ever just one employee on the premises while the facility is operating, they must have immediate access to a device, such as a telephone (immediately available at the scene of operation) or a hand-held two-way radio, capable of summoning external emergency assistance.

5. The Permittee shall within thirty (30) days of issuance of this Permit submit copies of the approved Contingency Plan by certified mail to appropriate police, fire departments, hospitals, and emergency response teams in the vicinity of the facility, including, but not necessarily limited to:
 - o Waterbury Police Department
 - o Waterbury Fire Department
 - o Waterbury Hospital
 - o St. Mary's Hospital
 - o Waterbury Health Department, Hazardous Materials Division
 - o CT state Fire Marshall's Office
 - o Local emergency planning officials
6. The Permittee shall notify the local emergency officials listed in Section V.H.5. above, within fifteen (15) days, whenever any changes occur in the facility layout or operation, or in the Contingency Plan itself, which materially affects Contingency Plan implementation or execution.
7. The Permittee shall within thirty (30) days of permit issuance send a letter by certified mail attempting to make arrangements, as appropriate for the types of materials handled at the facility and the potential need for the services of the following organizations, to familiarize police, fire departments, hospitals, and emergency response teams with the layout of the facility, properties of materials handled at the facility and associated hazards, places where facility personnel would normally be working, entrances to and roads inside the facility, and possible evacuation routes.

8. The Permittee shall retain in the Operating Record for the term of the Permit, copies of letters and certified mail receipts required by Section V.H.5. through 7., and documentation of any responses to those letters.

I. Contingency Plan

1. The Permittee shall immediately carry out the provisions of the Contingency Plan, incorporated herein as Attachment B, and follow the emergency procedures described below, whenever there is a fire, explosion, or release of hazardous waste or hazardous waste constituents which threatens or could threaten human health or the environment:
 - a. Whenever there is an imminent or actual emergency situation, the emergency coordinator (or his designee when the emergency coordinator is on call) must immediately:
 - i. Activate internal facility alarms or communication systems, where applicable, to notify all facility personnel; and
 - ii. Notify appropriate State or local agencies with designated response roles if their help is needed.
 - b. Whenever there is a release, fire, or explosion, the emergency coordinator must immediately identify the character, exact source, amount, and areal extent of any released materials. He may do this by observation or review of facility records or manifests, and, if necessary, by chemical analysis.
 - c. Concurrently, the emergency coordinator must assess possible hazards to human health or the environment that may result from the release, fire, or explosion. This assessment must consider both direct and indirect effects of the release, fire, or explosion (e.g., the effects of any toxic, irritating, or asphyxiating gases that are generated, or the effects of any hazardous surface water run-off from water or chemical agents used to control fire and heat-induced explosions).
 - d. If the emergency coordinator determines that the facility has had a release, fire, or explosion which could threaten human health, or the environment outside the facility, he must report his findings as follows:
 - i. If his assessment indicates that evacuation of local areas may be advisable, he must immediately notify appropriate local and state authorities, including those organizations as outlined in the list of emergency response agencies, see Attachment B, Contingency Plan, Section 10.4. He must be available to help appropriate officials decide whether local areas should be evacuated; and
 - ii. He must immediately notify the Commissioner using the 24-hour emergency spill response number (203) 566-3338, and provide the information in d.iii. below;

- iii. He must also immediately notify either the government official designated as the on-scene coordinator for that geographical area, (in the applicable regional Contingency Plan under 40 CFR 1510) or the National Response Center using their 24-hour toll free number 800/424-8802. The report must include:
- (A) Name and telephone number of reporter;
 - (B) Name and address of facility;
 - (C) Time and type of incident (e.g., release, fire);
 - (D) Name and quantity of material(s) involved, to the extent known;
 - (E) The extent of injuries, if any, and
 - (F) The possible hazards to human health, or the environment, outside the facility.
- e. During an emergency, the emergency coordinator must take all reasonable measures necessary to ensure that fires, explosions, and releases do not occur, recur, or spread to other hazardous waste and/or co-stored other materials at the facility. These measures must include, where applicable, stopping processes and operations, collecting and containing released materials, and removing or isolating containers.
- f. If the facility stops operations in response to a fire, explosion, or release, the emergency coordinator must monitor for leaks, pressure buildup, gas generation, or ruptures in valves, pipes, or other equipment, wherever this is appropriate.
- g. Immediately after an emergency, the emergency coordinator must provide for treating, storing, or disposing of recovered waste, contaminated soil or surface water, or any other material that results from a release, fire, or explosion at the facility.
- h. The emergency coordinator must ensure that, in affected area(s) of the facility:
- i. No waste that may be incompatible with the released material is treated, stored or disposed of until cleanup procedures are completed; and
 - ii. All emergency equipment listed in the Contingency Plan is cleaned and fit for its intended use before operations are resumed.
- i. The Permittee must notify the Commissioner and appropriate State and local authorities, that the facility is in compliance with Section V.I.1.h. before operations are resumed in the affected area(s) of the facility.
- j. The Permittee must note in the Operating Record the time, date and details of any incident that requires implementing the Contingency Plan. Within fifteen (15) days after the incident, he must submit a written report on the incident to the Commissioner. The report must include:

- i. Name, address, and telephone number of the Permittee;
 - ii. Name, address, and telephone number of the facility;
 - iii. Date, time, and type of incident (e.g., fire, explosion);
 - iv. Name and quantity of material(s) involved;
 - v. The extent of injuries, if any;
 - vi. An assessment of actual or potential hazards to human health or the environment, where this is applicable; and
 - vii. Estimated quantity and disposition of recovered material that resulted from the incident.
2. The Permittee shall maintain at the facility a copy of the Contingency Plan, and all revisions to the plan, at all times. The emergency coordinator, alternate emergency coordinator(s), and Production supervisors and any other personnel involved in the Contingency Plan implementation shall receive copies of the Contingency Plan and all updates to the Contingency Plan and shall be briefed on the implications of any such changes.
3. The Permittee shall review and immediately amend, if necessary, the Contingency Plan whenever:
 - a. This Permit is revised;
 - b. The Contingency Plan fails in an emergency;
 - c. The facility changes in its-design, construction, operation, maintenance, or other circumstances-in a way that materially increases the potential for fires, explosions, or releases of hazardous waste or hazardous constituents, or changes the response necessary in an emergency;
 - d. The list of emergency coordinators changes; or
 - e. The list of emergency equipment changes.The Permittee shall submit to the Commissioner, in writing, any modifications to the Contingency Plan. These modifications shall be accompanied by a request for permit modification in accordance with Section 22a-449(c)-110 of RCSA and 40 CFR 270.41-42.
4. The Permittee shall ensure that at all times there shall be at least one employee either on the facility premises or on call (e.g., available to respond to an emergency by reaching the facility within a short period of time) with the responsibility for coordinating all emergency response measures.

This emergency coordinator must be thoroughly familiar with all aspects of the facilities Contingency Plan, all operations and activities at the facility, the location and characteristics of waste handled, the location of all records within the facility, and the facility layout. In addition, this person must have the authority to commit the resources needed to carry out the Contingency Plan.

5. The Permittee shall comply with the following:

- a. Maintain up to date inventory lists of all hazardous wastes and co-stored other materials managed in the permitted units. A list shall be maintained for each area, tank and unit which is utilized to manage hazardous wastes and co-stored other materials;
- b. The Contingency Plan must specify the location of reference information on the hazardous wastes and co-stored other materials capable of being managed and as identified for each generator. The Contingency Plan shall be kept at the same location as the reference information on the hazardous wastes and co-stored other materials;
- c. Waste characterization data, laboratory analysis sheets, Material Safety Data Sheets (MSDSs) or MSDS equivalents must be available to the emergency coordinator or his designee on a 24 hour-a-day, 7 day-a-week basis;
- d. Information available through waste characterization data, laboratory analysis sheets, Material Safety Data Sheets (MSDSs) or MSDS equivalents must include all the information which must be known to treat, store, or dispose of the hazardous wastes and co-stored other materials in accordance with Sections of 22a-449(c)-100 through 110 of RCSA. The available information may contain but may not be limited to the following:
 - o chemical and common name;
 - o general composition;
 - o physical state (e.g., liquid, solid, gas, sludge, gel, etc.);
 - o relevant physical properties (e.g., for liquids, pH, specific gravity, flash point, vapor pressure; for vapors, explosion limits, vapor density; and for solids, combustibility); Note: approximations of physical properties are acceptable where this information is not available from published literature, manufacturer's information, or process knowledge.
 - o explosion/fire hazard;
 - o exposure/toxicity information (e.g., routes of exposure, toxicity);
 - o reactivity/compatibility data;
 - o special precautions and protective clothing required.

6. The Permittee may, at the Permittee's discretion, manage spills of an incidental nature (i.e., individual leaking tanks and containers, less-than-one-container-quantity spills, and similarly-sized incidents). Releases of greater size, as well as cleanup operations in response to such incidents shall be managed only by qualified outside contractors.

J. Manifest System

1. Whenever a shipment of hazardous waste is initiated from a facility or received at a facility the Permittee of that facility must comply with the applicable sections of 22a-449(c)-100 through 110 and 22a-449(c)-11 of RCRA, the requirements of 40 CFR 262, and the applicable sections of 40 CFR 264 Subpart E, regarding the use of manifests.

K. Operating Record

1. The Permittee must keep a written Operating Record at his facility.
2. The following information must be recorded, as it becomes available, and maintained in the Operating Record until Closure of the facility:
 - a. A description and the quantity of each hazardous waste received, and the method(s) and date(s) of its treatment, storage, or disposal at the facility as required by 40 CFR 264, Appendix I;
 - b. The location of each hazardous waste and co-stored other materials within the facility and the quantity at each location. This information must include cross-references to specific manifest document numbers, if the waste was accompanied by a manifest. In addition, a list of materials presenting a health hazard rating of 3 or higher shall be maintained which identifies the material, the quantity and the location within the facility;
 - c. Records and results of waste analyses performed as specified in Sections IV.A.11., IV.B.17., and V.C.3.; the Waste Analysis Plan; and 40 CFR 268.4(a) and 268.7;
 - d. Summary reports and details of all incidents that require implementing the Contingency Plan as specified in Section V.I.1.j;
 - e. Records and results of inspections as required by Section IV.A.21., IV.A.22., IV.B.2., and IV.C.15.; and the Inspection Schedule (Attachment E), except these data need be kept only three (3) years;
 - f. Monitoring, testing or analytical data, and corrective action where required by 40 CFR 264.73(b)(6);
 - g. For off-site facilities, notices to generators as specified in 40 CFR 264.12(b);

- h. All Closure cost estimates under Section 22a-449(c)-104 of RCSA and 40 CFR 264.142;
 - i. A certification by the Permittee no less often than annually in accordance with the annual hazardous waste report, that the Permittee has a program in place to reduce the volume and toxicity of hazardous waste that he/she generates to the degree determined by the Permittee to be economically practicable; and the proposed method of treatment, storage or disposal is that practicable method currently available to the Permittee which minimizes the present and future threat to human health and the environment;
 - j. Records of the quantities (and date of placement) for each shipment of hazardous waste placed in land disposal units under an extension to the effective date of any land disposal restriction granted pursuant to 40 CFR 268.5, a petition pursuant to Part 268.6, or a certification under Part 268.8, and the applicable notice required by a generator under Part 268.7(a);
 - k. For an off-site treatment facility, a copy of the notice, and the certification and demonstration, if applicable, required by the generator or the Permittee under 40 CFR 268.7 or 268.8;
 - l. For an on-site treatment facility, the information contained in the notice (except the manifest number), and the certification and demonstration if applicable, required by the generator or the Permittee under 40 CFR 268.7 or 40 CFR 268.8;
 - m. For an off-site storage facility, a copy of the notice, and the certification and demonstration if applicable, required by the generator or the Permittee under 40 CFR 268.7 or 268.8;
 - n. For an on-site storage facility, the information contained in the notice (except the manifest number), and the certification and demonstration if applicable, required by the generator or the Permittee under 40 CFR 268.7 or 268.8; and
 - o. Any other information required to be maintained by this Permit (e.g., waste characterization data, manifest data, records for all on-site transfers of waste including but not limited to that information contained in Section II.A.23., notices to generators as specified in Section V.B.2.).
3. In addition to the informational requirements outlined above, the Permittee shall at all times retain in the facility Operating Record, the previous two years batch cards verifying the quantities of hazardous wastes recycled during this time period.

L. Availability, Retention, and Disposition of Records

- 1. All records, including plans, required under Section 22a-449(c) of RCSA, and this Permit must be furnished upon request, and made available at all reasonable times for inspection, by any officer, employee, or representative of CT DEP or EPA who is duly designated by the Commissioner or the Regional Administrator.

2. The retention period for all records required under Section 22a-449(c) of RCSA and this Permit is extended automatically during the course of any unresolved enforcement action regarding the facility or as requested by the Commissioner of DEP or the Regional Administrator of EPA.

M. Annual Report

The Permittee must prepare and submit an annual report to the Commissioner of CT DEP by March 1 of each year on such forms as the Commissioner may direct.

N. Closure

1. The Permittee shall close the facility in a manner that:
 - a. Minimizes the need for further maintenance;
 - b. Controls, minimizes, or eliminates, to the extent necessary to protect human health and the environment, post-closure escape of hazardous waste, hazardous constituents, leachate, contaminated run-off, or hazardous waste decomposition products to the ground or surface water or to the atmosphere; and
 - c. Complies with the closure requirements of 22a-449(c)-104 of RCSA, 40 CFR Parts 264.110-115, 264.178 and 264.197 and the Closure Plan incorporated herein as Attachment C, as modified herein.
2. A copy of the Closure Plan and all approved revisions to the Closure Plan shall be submitted to the Commissioner upon request and shall be kept at the facility until closure is completed and certified.
3. The Permittee shall submit a written notification of or request for a permit modification to authorize a change in operation plans, facility design, or the approved Closure Plan in accordance with the applicable procedures in 22a-449(c)-100 through 110 of RCSA and 40 CFR Parts 124 and 270. The written notification or request must include a copy of the amended Closure Plan for review or approval by the Commissioner.
4. The Permittee may submit a written request to the Commissioner for a permit modification to amend the Closure Plan at any time prior to the notification of partial or final closure of the facility. A copy of the proposed amended Plan must be included with the request.
5. The Permittee shall submit a written notification of or a request for a modification to the Commissioner to authorize a change in the approved Closure Plan whenever:

- a. Change in operating plans or facility design affect the Closure Plan; or
 - b. There is a change in the expected year of closure; or
 - c. In conducting partial or final closure activities, unexpected events require a modification of the approved Closure Plan; or
 - d. New or additional information becomes known which requires a modification of the approved Closure Plan.A copy of the proposed amended Plan must be included with the request.
6. The Permittee shall submit a written request for a permit modification to the Commissioner including a copy of the amended Closure Plan for approval at least sixty (60) days prior to the proposed change in facility design or operation, or no later than sixty (60) days after an unexpected event has occurred which has affected the Closure Plan. If an unexpected event occurs during the partial or final closure period, the Permittee shall request a permit modification no later than thirty (30) days after the unexpected event.
7. The Commissioner may request modifications to the Closure Plan under the conditions described in Section V.N.5. The Permittee shall submit the modified Closure Plan within sixty (60) days of the Commissioner's request, or within thirty (30) days if the change in facility conditions occurs during partial or final closure.
8. The date when the Permittee "expects to begin closure" must be no later than thirty (30) days after the date on which any hazardous waste management unit receives the known final volume of hazardous wastes, or if there is a reasonable possibility that the hazardous waste management unit will receive additional hazardous wastes, no later than one year after the date on which the unit received the most recent volume of hazardous waste. The Permittee shall notify the Commissioner in writing at least forty five (45) days prior to the date on which he expects to begin final closure of the facility.
9. The Permittee shall complete partial and final closure activities in accordance with the Closure Plan, incorporated as Attachment C and as modified herein, within one hundred eighty (180) days after receiving the final volume of waste.
10. The Permittee shall properly dispose of, or decontaminate, all contaminated equipment and structures associated with hazardous waste storage and processing activities in accordance with the Closure Plan incorporated as Attachment C and as modified herein, and all applicable requirements of 22a-449(c)-100 through 110 of RCSA.

11. Within sixty (60) days of the completion of final closure, the Permittee shall submit to the Commissioner by registered mail, certification both by the Permittee and by an independent registered professional engineer that the hazardous waste portions of the facility has been closed in accordance with the specifications in the Closure Plan, included as Attachment C and as modified herein. Documentation supporting the independent, registered professional engineer's certification must be furnished to the Commissioner of DEP upon request until the Commissioner releases the Permittee from the financial assurance requirements for closure under 40 CFR 264.143(i).
12. The Permittee shall close the hazardous waste units of the facility in accordance with the applicable sections of the facility Closure Plan, incorporated as Attachment C and as modified herein. All interpretations as to parameter selection, determination of clean-closure, background values, etc. shall be reserved by the Commissioner of DEP.
13. Nothing in Section V.N. shall preclude the Permittee from removing hazardous wastes and decontaminating or dismantling equipment in accordance with the approved partial or final Closure Plan at any time before or after notification of partial or final closure.
14. If it is determined that the containment area of the bulk tank system has leaked to subgrade, and that not all contaminated soils can be practicably removed or decontaminated as required by 40 CFR 264.197(a), then the Permittee must close the tank system and perform post-closure care in accordance with the closure and post-closure care requirements that apply to landfills (e.g., 40 CFR 264.310). In addition, for the purposes of closure, post-closure, and financial responsibility, such a tank system is then considered to be a landfill, and the Permittee must meet all of the requirements for landfills specified in Subparts G and H of 40 CFR 264.

0. Financial Responsibility

1. The Permittee shall have and maintain at the facility pursuant to 40 CFR 264.142 a written estimate of the cost of closing the facility in accordance with the approved Closure Plan.
2. The Permittee shall adjust the closure cost estimates for inflation in accordance with procedures specified in 40 CFR 264.142(b). The adjustment shall be made by October 1 of each year. The latest adjusted cost estimate shall be kept at the facility, and a signed original shall be submitted to the Commissioner within fourteen (14) days of preparation.

3. The Permittee shall revise the closure cost estimates whenever a change in the approved Closure Plan increases the cost of closure. The revised closure cost estimate shall then be adjusted for inflation as specified in Section V.O.2. above.
4. The Permittee shall in accordance with 40 CFR 264.143 or 40 CFR 264.149, establish and continuously maintain financial assurance for closure of the facility. Such financial assurance shall be maintained until the Commissioner notifies the Permittee in writing that he/she is no longer required to maintain financial assurance for closure of the facility.
5. The wording of the financial assurance mechanism(s) secured for the purpose of compliance with Section V.O.4. above shall be identical to the wording specified in 40 CFR 264.151, except that all references to the "Regional Administrator of EPA" shall be changed to the "Commissioner of DEP".
6. The Permittee shall in accordance with 40 CFR 264.147(a) or 40 CFR 264.149 establish and continuously maintain liability coverage for sudden accidental occurrences at the facility. The liability coverage shall be in the amount of at least \$1 million per occurrence with an annual aggregate of at least \$2 million, exclusive of legal costs. The liability coverage shall be maintained until the certification of final closure required by Section V.N.11. is received by the Commissioner unless the Commissioner has reason to believe that closure has not been in accordance with the approved Closure Plan.
7. The wording of the liability insurance documentation submitted for the purposes of compliance with Section V.O.6. above shall be identical to the wording specified in 40 CFR 264.151, except that all references to the "Regional Administrator of EPA" shall be changed to the "Commissioner of DEP".
8. The Permittee shall comply with the requirements of 40 CFR 264.148 in the event of incapacity of the Permittee, guarantors or financial institutions.

P. Air Emission Standards for Process Vents

1. As applicable, the Permittee shall comply with the requirements of 40 CFR Part 264, Subpart AA--Air Emission Standards for Process Vents, for all equipment regulated by the above referenced regulations and as regulated by this Permit. The Regulations in this subpart apply to Permittee's of facilities that treat, store, or dispose of hazardous wastes. Except for part 264.1034(d) and (e), this Section applies to process vents associated with distillation, fractionation, thin-film evaporation, solvent extraction, or air or steam stripping operations that manage hazardous waste with organic concentrations of at least 10-ppmw, if these operations are conducted in:

- a. Units that are subject to the permitting requirements of part 270 of 40 CFR, or
 - b. Hazardous waste recycling units that are located on hazardous waste management facilities otherwise subject to the permitting requirements of part 270 of 40 CFR.
2. Standards:
The Permittee shall comply with the applicable requirements for:
 - a. Process vents (40 CFR 264.1032), and
 - b. Closed-vent systems and control devices (40 CFR 264.1033).
 3. Each Permittee subject to the provisions of this subpart shall comply with the test methods and procedures requirements provided in 40 CFR 264.1034.
 4. Each Permittee subject to the provisions of this subpart shall comply with the recordkeeping requirements of 40 CFR 264.1035.
 5. A semiannual report shall be submitted by the Permittee subject to the requirements of 40 CFR 264.1036 to the Regional Administrator and the Commissioner by dates specified by the Regional Administrator. The report shall include the information specified in 40 CFR 264.1036.

Q. Air Emission Standards for Equipment Leaks

1. As applicable the Permittee shall comply with the requirements of 40 CFR Part 264, Subpart BB--Air Emission Standards for Equipment Leaks, for all equipment regulated by the above referenced Regulations and as regulated by this Permit. The Regulations in this subpart apply to owners and operators of facilities that treat, store, or dispose of hazardous wastes.
 - a. Except as provided in 40 CFR 264.1064(k), this Section applies to equipment that contains or contacts hazardous wastes with organic concentrations of at least 10 percent by weight that are managed in:
 - i. Units that are subject to the permitting requirements of 40 CFR Part 270; or
 - ii. Hazardous waste recycling units that are located on hazardous waste management facilities otherwise subject to the permitting requirements of 40 CFR 270.
 - b. Each piece of equipment to which this Section applies shall be marked in such a manner that it can be distinguished readily from other pieces of equipment.
 - c. Equipment that is in vacuum service is excluded from the requirements of 40 CFR Parts 264.1052 to 264.1060 if it is identified as required in Part 264.1064(g)(5).

2. Standards:

- a. The Permittee shall comply with the applicable requirements or 40 CFR for:
 - o Pumps in light liquid service (Part 264.1052);
 - o Compressors (Part 264.1053);
 - o Pressure relief devices in gas/vapor service (Part 264.1054);
 - o Sampling connecting systems (Part 264.1055);
 - o Open-ended valves or lines (Part 264.1056);
 - o Valves in gas/vapor service or in light liquid service (Part 264.1057);
 - o Pumps and valves in heavy liquid service, pressure relief devices in light liquid or heavy liquid service, and flanges and other connections (Part 264.1058);
 - o Closed-vent systems and control devices (Part 264.1060);
 - o Delay of repair (Part 264.1059);
 - b. Or, the Permittee may elect to comply with the alternate standards as identified below providing the appropriate notification requirements have been met by the Permittee, to the satisfaction of the Commissioner:
 - o Alternative standards for valves in gas/vapor service or in light liquid service: percentage of valves allowed to leak (Part 264.1061);
 - o Alternative standards for valves in gas/vapor service or in light liquid service: skip period leak detection and repair (Part 264.1062)
3. Each Permittee subject to the provisions of this Section shall comply with the test methods and procedures requirements provided in 40 CFR 264.1063.
 4. Each Permittee subject to the provisions of this Section shall comply with the recordkeeping requirements of 40 CFR 264.1064.
 5. A semiannual report shall be submitted by the Permittee subject to the requirements of 40 CFR 264.1065 to the Commissioner by dates specified by the Commissioner. The report shall include the information specified in 40 CFR 264.1065.

R. Applicable Laws

1. In addition to complying with the requirements of this Permit, the Permittee shall comply with all applicable Federal, State, and Local laws.

SECTION II

ATTACHMENT A

WASTE ANALYSIS PLAN

Attachment AWaste Analysis Plan

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<u>Table</u>	<u>Title</u>
Table 1	Used Surface Finishing Chemicals Received from Customers or Off-Site MacDermid Facilities for Recycling
Table 2	Description of Wastes Received from MacDermid's 245 Freight Street Facility
Table 3	Description of Wastes Generated On-Site
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<u>Figure</u>	<u>Title</u>
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<u>Appendices</u>	<u>Title</u>
Appendix 1	Sample Waste Characterization/Verification Forms: MacDermid's Generator Certification Package, for recycleable hazardous wastes being returned to MacDermid, Inc.; On-Site Generated Waste (report form); Generated Wastes - Spot Test (report form).
Appendix 2	A Description of the Internal Waste Tracking System
Appendix 3	Spot Testing Procedures

ATTACHMENT A

WASTE ANALYSIS PLAN

1. Waste Characterization

- a. Before the Permittee stores, treats (recycles) or disposes of hazardous waste received from off-site and generated on-site, the Permittee shall obtain a detailed chemical and physical analysis of a representative sample of the waste. A detailed chemical and physical analysis shall utilize one or more of the methods identified in Section 1.c. below. At a minimum, this analysis shall contain all the information which must be known to store, treat (recycle) or dispose of the waste in accordance with 40 CFR Parts 261, 264, 266, 268 and 270 and the conditions of this Permit. [Note: This Permit regulates all recyclable hazardous wastes generated on-site and received from off-site until such time that the recyclable wastes are placed into the specific facility tanks dedicated to recycling. Upon placement of the recyclable hazardous wastes into the dedicated recycling tanks, regulatory control of the facility hazardous waste operations transfers from this Hazardous Waste Permit EPA I.D. No. CTD001164599 to the State 22a-454 Permit.]
- b. Waste characterization for wastes received from off-site, wastes generated on-site and other materials co-stored with the hazardous waste shall be conducted:
 - i. for the first time characterization of waste streams received from off-site and/or wastes generated on-site;
 - ii. when the Permittee is notified, or has reason to believe, that the process or operation generating the hazardous waste has changed;
 - iii. when the Permittee suspects that the characteristics of the waste have changed;
 - iv. when the waste does not conform to the description on the generator waste certification package for off-site customers or the waste report for MacDermid's off-site facilities; and
 - v. for annual re-characterization of both off-site wastes and for wastes generated on-site.
- c. All wastes received from off-site, the wastes generated on-site, and other materials which are managed in the permitted areas/units shall be characterized at a minimum, as specified in Section 1.d. below through manufacturer's information, process information, and/or laboratory analysis as described herein. For the purposes of this Permit, the MacDermid Huntingdon Avenue facility shall be identified as the responsible party required to ensure that the waste and other material characterization is complete and accurate. Complete and accurate material characterization information shall be that which complies with 40 CFR Parts 261, 264, 266, 268, 270 and the conditions of this Permit.

i. Manufacturer Information

Data obtained from manufacturers identifying raw materials, products, or similar materials may be used when appropriate. This shall include, but is not limited to, material specifications and material safety data sheets (MSDS's) such that this data supports and documents the information required by the specified characterization parameters.

ii. Process Information

Knowledge of the process generating the waste may be used when appropriate. This includes published or documented data on the hazardous waste generating process or information documenting the generation of hazardous waste by similar processes. This data shall support and document the information required by the specified characterization parameters.

iii. Laboratory Analysis

If wastes cannot be properly or fully characterized through manufacturer information or process information as described above, then appropriate sampling and analytical procedures shall be conducted by qualified trained personnel in accordance with the methods and requirements in EPA Publication SW-846 (latest edition) or other EPA or DEP approved methods.

NOTE: The waste certification package for off-site customers and the waste report for off-site MacDermid facilities shall be completely filled out line by line. Refer to Appendix 1 for examples of the waste certification package and the waste report. The generator shall have knowledge of each data entry and all information included shall be verified by the MacDermid Huntingdon Avenue facility.

The waste characterization package information provided by the generator must accurately characterize chemical composition of the waste stream including, at a minimum, quantitative and/or descriptive data for each of the waste characterization parameters specified in Section 1.d. below, known health and/or environmental effects of the waste, and known hazards in handling or disposing of the waste (e.g., highly toxic and reactive components and hazard potential).

The Permittee shall require and maintain the necessary information which documents the data being provided. Records of all evaluations/analyses required in this section shall be retained in the facility operating record for at least three years, or until termination of a customer's contract, whichever is longest.

d. Waste Characterization Parameters.

Waste characterization parameters for the permitted wastes being managed at the facility are identified in Tables 1, 2, and 3. Tables 1, 2, and 3 identify the permitted wastes by waste stream categories, as shown below.

- o Table 1 Used surface finishing chemicals received from off-site (customers and MacDermid facilities) for recycling;
- o Table 2 Wastes received from MacDermid's 245 Freight Street facility;
- o Table 3 Wastes generated on-site.

For the permitted waste streams, the waste characterization parameters and allowable concentration ranges identified in the above referenced tables shall be utilized to properly characterize all wastes and shall be utilized to determine waste acceptance and waste rejection. The Permittee shall follow Figure 1 "Flow Diagram for Accepting or Rejecting Used Surface Finishing Chemicals From Customers and Off-Site MacDermid Facilities". Only those wastes listed in the referenced tables which are determined to be within the allowable concentration ranges may be received from off-site, and/or generated on-site and managed in the permitted storage or recycling units at the MacDermid, Huntingdon Avenue facility. The Permittee shall ensure that the special procedures identified below are complied with for the following wastes:

- i. For recyclable hazardous wastes received from off-site which are classified in the categories identified in (A) or (B) below, the Permittee shall comply with the requirements identified herein.
 - (A) For wastes received from off-site customers for the first time;
 - (1) Collect a representative sample of the waste(s) to be received.
 - (2) Transport and submit samples in accordance with the instructions in MacDermid's generator certification package.
 - (3) Complete the generator certification package, see Appendix 1. A first time customer's waste(s) may only be shipped to the Huntingdon Avenue facility following completion and submittal of the generator certification package, and only after MacDermid, Inc. has complied with the waste characterization requirements and provides the generator with an acknowledgement of authorization for shipment to the facility. Only the waste streams indicated in Table 1, which are determined to be within the allowable concentration ranges shall be shipped to the facility. A properly completed manifest shall accompany each shipment of waste.

- (4) Following this initial waste characterization, each shipment of an off-site customers waste received at the Permittee's facility need only be spot tested in accordance with Section 2 unless the conditions identified in Section 1.b. require waste re-characterization.
- (B) For subsequent shipments of waste from off-site customers, or for wastes received from off-site MacDermid facilities (other than 245 Freight Street), for recycling at Huntingdon Avenue the requirements identified below shall be complied with. [Note: Any of several off-site MacDermid facilities, other than 245 Freight Street may act as a transfer facility or a transporter for wastes being sent to the Huntingdon Avenue facility and may be designated as either an off-site customer or an off-site generator.];
 - (1) The MacDermid Huntingdon Avenue facility shall arrange for shipment of the wastes identified in Table 1 with the generator (the off-site customer or the off-site MacDermid facility) of the waste. The arrangements shall identify each waste to be shipped and ensure that the waste constituents and the allowable concentration ranges are within the parameter values allowed at the Huntingdon Avenue facility. Final approval for waste shipment shall be coordinated by the Huntingdon Avenue facility prior to any waste shipment to Huntingdon Avenue.
 - (2) The off-site customer or off-site MacDermid facility shall then ship the pre-approved waste to Huntingdon Avenue. A properly completed manifest shall accompany each shipment of waste.
 - (3) Upon receipt of these wastes from off-site the MacDermid Huntingdon Avenue facility shall perform spot testing in accordance with Section 2 of this Attachment.
- ii. For wastes received from MacDermid's 245 Freight Street facility;
 - (A) The generating department at MacDermid's 245 Freight Street facility shall have each shipment of waste analyzed for the constituents listed in Table 2.
 - (B) The generating department at 245 Freight Street shall submit this data, and any other information required by the compliance administrator in the form of a completed waste report. This report shall accompany each shipment of waste received at the Huntingdon Avenue facility and must be retained in the operating record for a period of at least three years. The report forms have been included as Appendix 1 of this Attachment.

- (C) Only the waste streams indicated in Table 2, which are within the allowable concentration ranges shall be received and accepted from MacDermid's 245 Freight Street facility. A properly completed manifest shall accompany each shipment of waste.

iii. For the following wastes generated on-site;

- (A) Used surface finishing chemicals, off-specification surface finishing chemicals and surface finishing chemicals otherwise rendered unfit for sale to customers:
- (1) An internal waste tracking system shall be utilized to ensure proper waste characterization and allow for waste transfer from the generating department or area to the on-site permitted storage or management area. See Appendix 2 for an explanation of the internal tracking system for on-site generated wastes. Each volume of the waste surface finishing chemicals which will be recycled on-site or which will be stored on-site pending off-site disposal, shall be characterized in accordance with Section 1.c. for the waste constituents and allowable concentration ranges identified in Table 3.
 - (2) Any volume of waste which does not meet the specifications of Table 3 shall not be stored or recycled at the Permittee's facility and must be sent off-site to a permitted hazardous waste facility within 90 days of generation.
- (B) Hazardous wastes generated on-site, other than waste surface finishing chemicals:
- (1) An internal waste tracking system shall be utilized to ensure proper waste characterization and allow for waste transfer from the generating department or area to the on-site permitted storage or management area. See Appendix 2 for an explanation of the internal tracking system for on-site generated wastes. Each volume of hazardous waste which will be recycled or which will be stored on-site pending off-site disposal shall be characterized in accordance with Section 1.c. for the waste constituents and allowable concentration ranges identified in Table 3.
 - (2) Any volume of waste which does not meet the specifications of Table 3 may not be stored or recycled at the Permittee's facility and must be sent off-site to a permitted hazardous waste facility within 90 days of generation.

- e. Analytical test methods and other appropriate sampling methods shall be used to conduct the analyses specified in Sections 1 and 2 of this attachment. Approved methods which may be used to conduct the analyses specified in Sections 1 and 2 of this Waste Analysis Plan include those specified in "Test Methods for Evaluating Solid Waste; Physical/Chemical Methods", EPA Publication SW-846 (November, 1986 or as revised); methods approved in the codification of 40 CFR Part 260.11; and methods prescribed by Standard Methods for the Examination of Water and Wastewater (SM); or other approved DEP or EPA methods.
- i. The following are the SW-846 approved analytical methods for use in complying with the requirements of this Permit.

<u>Parameter</u>	<u>Analytical Method</u>
Aluminum	7020
Arsenic	7060
Cadmium	7130
Chloride	9251
Chromium	7190
Copper	7210
Iron	7380
Lead	7420
Nickel	7520
Palladium	3010/6010
Tin	7870
Mercury	7470
Zinc	7950
Acetone	8240
Chlorobenzene	8010
Cyclohexanone	8240
Ethyl Acetate	8240
Ethyl Benzene	8020
Ethyl Ether	8015
Isobutanol	8015
Methanol	8240
Methyl Ethyl Ketone	8015
Methyl Isobutyl Ketone	8015
Methylene Chloride	8010
N-Butyl Alcohol	8015
Tetrachloroethylene	8010
Toluene	8020
1,1,1-Trichloroethane	8010
Trichloroethylene	8010
1,1,2-Trichloro-	
1,2,2-Trifluoroethane	8010
Xylene	8020

<u>Parameter</u>	<u>Analytical Method</u>
EPA Method 8010 Chlorinated Hydrocarbons	8010
pH	9049
Flash Point	1010

- ii. The following are additional analytical test methods allowed by this Permit.

<u>Parameter</u>	<u>Source/Method</u>
Fluoride	Method 413, <u>Standard Methods for the Examination of Water and Wastewater</u> , 1985 edition (or as revised), American Water Works Association.

- f. The following methods shall be used when conducting the sampling specified in this Permit:

Sampling Methods

<u>WASTE TYPE</u>	<u>SAMPLING DEVICE</u>
Free-flowing liquids (Drums or storage totes)	Coliwasa
Sludges (Roll-off Dumpsters)	Trier
Free-flowing liquids Truck tankers)	Weighted Bottle, Bailer
Sludges	Glass or Metal Sampling Tube

Coliwasa, trier, and tube samplers shall be selected with lengths capable of obtaining representative samples of wastes throughout the entire depth of the container or tank. The above sampling methods shall be performed as described in SW-846, "Test Methods for Evaluating Solid Waste; Physical/Chemical Methods", November 1986 or as revised. Any samples which will not be immediately analyzed must be containerized and preserved in accordance with the methods specified in Table 5 (by reference to SW-846) or as required in the specific approved test method being utilized.

The Permittee shall maintain a laboratory analysis quality assurance/quality control plan for the on-site analysis of hazardous wastes. The Permittee shall utilize only Connecticut Health Department or EPA certified laboratories, whichever may be required, for all samples not analyzed on-site.

Sampling of wastes (used surface finishing chemicals) received from off-site customers and off-site MacDermid facilities (excluding 245 Freight Street) shall be performed for each shipment of waste received at the Huntingdon Avenue facility. Wastes received from 245 Freight Street do not require on-site sampling for waste characterization and waste verification. Waste characterization for these wastes shall be conducted at 245 Freight Street prior to each shipment, and a paperwork review of the completed waste report, the On-site Generated Waste Report form, shall be performed at Huntingdon Avenue upon receipt to ensure that the wastes are capable of being accepted at the Huntingdon Avenue facility.

All sampling where applicable shall be performed on each container and for each tank truck received from off-site. With tank truck shipment of hazardous waste, each compartment of the tank truck shall be sampled whenever:

- i. compartments contain different waste streams; or,
- ii. compartments contain the same waste streams, but were collected from different facilities.

2. Waste Verification (Evaluation/Spot Testing)

- a. In addition to initial waste characterization, waste verification, as outlined below shall be employed as a secondary check of waste identity for shipments of waste received from off-site and for wastes generated on-site. Wastes received from off-site or generated on-site which do not have the characterization/verification parameters defined as indicated in Sections 1.d and 2. shall not be accepted, stored, recycled or otherwise managed in any of the permitted hazardous waste management areas.
 - i. Used surface finishing wastes received from off-site customers, generated on-site or received from off-site MacDermid facilities which will or may be recycled at the Huntingdon Avenue facility are identified in Table 4 of this attachment. Table 4 identifies the waste verification (spot test) parameters which shall be evaluated and the allowable parameter specifications for recyclable wastes which may be accepted at the Huntingdon Avenue facility. Waste verification (spot testing) shall be conducted as specified in Appendix 3 of this Attachment.

- ii. Wastes received from MacDermid's 245 Freight Street facility do not require spot testing when received at Huntingdon Avenue as these wastes are characterized by 245 Freight Street prior to each shipment. The waste characterization data in accordance with Table 2 shall be included with each shipment of waste received at Huntingdon Avenue and shall be reviewed upon receipt to ensure compliance with the facility Permit. Wastes which do not meet the allowable parameter specifications identified in Table 2 shall not be accepted and must be returned to the 245 Freight Street facility.
- iii. Used surface finishing wastes generated on-site shall be spot tested prior to their being placed into the permitted units or areas. Used surface finishing wastes shall be spot tested for the parameters identified in Table 4. Used surface finishing wastes which do not meet the specifications indicated in Table 4 shall be tested for the appropriate Table 3 parameters. If the waste does not conform with the specifications in Table 3, it shall not be accepted for storage in any of the permitted units and shall be shipped off-site to a permitted hazardous waste facility within 90 days of generation. Also, the use of an internal tracking system shall be required for all wastes generated on-site to ensure that the waste, the container labeling and the accompanying paperwork are accurate and complete for the purposes of complying with the terms and conditions of this Permit. A description of the internal tracking system which shall be used for on-site generated waste is included in Appendix 2 of this Attachment.

Only those wastes listed in Tables 1, 2, 3 and 4 which are determined to be within the allowable concentration ranges may be managed in the permitted units and areas for storage or recycling at the MacDermid, Huntingdon Avenue facility.

- b. Prior to the transfer or the bulking of a waste stream into a storage, recycling or other waste management unit or area, the Permittee shall verify, through spot testing, the waste in the receiving unit, or area in accordance with the procedures identified in Appendix 3 of the Waste Analysis Plan and confirm that the contents are as indicated and that the materials are compatible with the materials to be transferred. See also Section 4 regarding compatibility testing.
- c. All wastes received from off-site via MacDermid vehicles shall be evaluated/spot tested in accordance with the requirements of this section within 48 hours of receipt or re-characterized in accordance with Section 1.d. within 72 hours of receipt and either accepted or rejected.

All tank truck and container shipments of used surface finishing chemicals arriving from off-site via non-MacDermid vehicles shall be evaluated/spot tested in accordance with the requirements of this section within 6 hours of receipt. Any wastes which fail the spot tests shall, within this time period, be rejected or further tested in accordance with Section 1.d. and subsequently be accepted or rejected in accordance with the specification parameters identified in Table 1.

- d. Records of all evaluations/analyses required in this section must be retained in the facility operating record for a period of at least three years.

3. Characterization of Spills

- a. Spill residues from known sources shall be evaluated/analyzed for the appropriate parameters referenced in Section 1.d. The results from these evaluations/analyses shall be used to characterize the spill residues.
- b. Spill residues from unknown sources shall be evaluated/analyzed for all the parameters referenced in Section 1.d. to identify the waste, determine the proper waste management and compatibility group and ensure that sufficient information is obtained for proper storage, recycling or disposal of the waste. If the material is not permitted to be managed at the facility, the material shall not be managed in the permitted units or areas and must be shipped off-site to a permitted hazardous waste facility within 90 days.

4. Compatibility Testing

- a. Hazardous wastes or other materials co-stored in the permitted areas or units shall be fully characterized and verified in accordance with Sections 1 and 2 of this Waste Analysis Plan. Hazardous waste or other materials already characterized do not need to be re-characterized unless any of the conditions stated in Section 1.b. of this attachment apply.
- b. Using, at a minimum, the procedures specified in Section 4.d. below, the Permittee shall:
 - i. determine the compatibility of each waste with each other waste or other material with which it may be stored, recycled or managed;
 - ii. determine the compatibility of each waste with the physical structures that it may come in contact with while in storage; and
 - iii. determine the compatibility of each waste with the container or tank unit in which it may be stored or managed.

- c. A waste is considered incompatible with another waste or other material, if, upon mixing or contact, a reaction may occur which:
- i. generates excessive heat or pressure, fire or explosion, or violent reactions;
 - ii. produces toxic mists, fumes, dusts, or gases in sufficient quantities to threaten human health or the environment;
 - iii. produces flammable fumes or gases in sufficient quantities to pose a risk of fire or explosion;
 - iv. damages the structural integrity in its container, containment structure, or any other structure or equipment required by this Permit; or
 - v. through other like means, threatens human health or the environment.
- d. The Permittee shall assess compatibility of wastes and other materials as follows:
- i. For each waste stream to be accepted from off-site or generated on-site which is to be stored or otherwise managed on-site, assign a Reactivity Group Number (RGN) to each chemical constituent present in the waste stream and conduct the compatibility assessment in accordance with "A Method for Determining the Compatibility of Hazardous Wastes", EPA Document EPA-600/2-80-076. NOTE: When it is known by material knowledge, manufacturer information, process knowledge, and/or testing or laboratory analysis that a mixture does not exhibit the reactivity associated with a particular RGN for the given waste, that RGN will not apply to the waste, however, verification documentation must be maintained in the facility operating record.
 - ii. Using knowledge of the presence of each chemical constituent within a waste, their RGNs, and considering the concentration of the constituents, their physical state, the medium in which they exist, the presence of other chemical constituents, and other relevant factors, including those listed in Sections 4.a. through c. above, compare all the likely RGNs for a waste stream or other material with the RGNs allowed in a storage or management group or area. Then select compatible storage locations or waste management units from among the permitted hazardous waste management areas utilizing Table 6, "ALLOWABLE WASTE STORAGE LOCATIONS, CONTAINER TYPES, AND HAZARD CLASSES" for the proper (segregated) waste storage.
 - iii. Any two wastes or materials which yield RGN pairs indicating an incompatible reaction, shall be considered incompatible, unless actual documented compatibility tests demonstrate that the wastes in question are, in fact, compatible.

- iv. For wastes or other materials having RGN pairs which indicate a reaction due to incompatibility, laboratory tests may be performed in accordance with the following example to further assess the extent or degree of an incompatible reaction. Example: while conducting the following procedures under a fume hood a small (e.g. 5 ml) quantity of each material should be thoroughly mixed to safely determine if a highly vigorous or otherwise potentially hazardous reaction occurs. If the observed reaction is not highly vigorous, a larger quantity (e.g. at least 500 ml) of each of the materials should be thoroughly mixed, allowed to stand for a period of time (e.g., 15 minutes), the reaction observed and results analyzed. If compatibility tests do not result in an incompatible reaction as defined in Section 4.c, above and having demonstrated compliance with 40 CFR Part 264.13 and 264.17, the Permittee may, at the Permittee's discretion, consider the substances compatible. If an incompatible reaction is observed, as defined in Section 4.c above, the materials shall be considered incompatible.
- v. Laboratory results and observations used to confirm any findings of compatibility or incompatibility for any wastes or other materials shall be retained in the operating record for the term of the Permit.

5. Degree of Hazard Determination

Prior to placing into storage, wastes or other materials, the Permittee shall determine the degree of hazard for each material to be stored in the permitted hazardous waste storage areas. The degree of hazard for each material shall be determined as follows:

- a. Obtain the applicable degree of hazard and/or hazard class rating for each material, as defined in NFPA 704, NFPA 325M, NFPA 49, NFPA 43A, NFPA 43B, NFPA 43C or by means of an alternate method for assessing hazards as approved by the DEP, (e.g., using the "Hazardous Materials Identification System", HMIS). For mixtures containing two or more chemicals the Permittee shall conduct one of the following:
 - i. The degrees of hazard for each chemical constituent shall be determined. The mixture is then assigned the degrees of hazard which represent the most severe degrees of hazard associated with the chemical constituents within the mixture. When a chemical constituent does not have a degree of hazard rating, the Permittee shall assign one using either the NFPA 704 quantitative or qualitative determination or by another DEP approved method. The selection and assignment of the degrees of hazard shall clearly document the Permittee's evaluation/analysis. (Note: the NFPA 704 criteria for qualitative information shall be deemed appropriate when quantitative information is unavailable or inadequate); or

- ii. The degrees of hazard for the entire mixture may be assigned provided the Permittee can determine and document the principal hazards of the mixture. The method to be used to provide the degrees of hazard for the mixture shall be as outlined in NFPA 704 (e.g., the quantitative or qualitative method, where qualitative information shall be deemed appropriate when quantitative information is unavailable or inadequate) or by the alternative DEP-approved method such as the HMIS.
- b. All information used to make the determination must be clearly documented and maintained in the operating record until closure of the facility.

6. Other Materials Requirements

- a. Before the Permittee stores or manages any other material in the permitted storage or management areas, he/she shall obtain a detailed chemical and physical analysis of a representative sample of the other material. At a minimum, this analysis shall contain all the information which must be known to store, or manage the other material in accordance with the terms and conditions of this Permit. The Permittee shall conduct the other material characterization in accordance with Sections 1.b. and 1.c., above. Documentation of all other material characterizations shall be retained in the operating record for at least three years.
- b. The following criteria shall be utilized to characterize other materials prior to their being stored or managed in the permitted hazardous waste areas.
 - i. Chemical name/Primary Chemical Constituents;
 - ii. Compatibility Determination (see Section 4); and
 - iii. Degree of Hazard Determination (see Section 5).

TABLE 1

USED SURFACE FINISHING CHEMICALS RECEIVED
FROM CUSTOMERS OR OFF-SITE MACDERMID FACILITIES FOR RECYCLING

EPA Hazardous Waste Number	Material Description	Waste Constituent	Allowable ⁴ Conc. Range	Hazard	Handling Method
D002/D004/D007/D008	Copper Etchant	Water ²	Balance	Corrosive Toxic	S01 & S02
		Ammonia ²	40-200 g/l		
		Chloride ²	100-250 g/l		
		Copper	0-200,000 ppm		
		Zinc	0-2,000 ppm		
		Tin	0-200 ppm		
		Lead	5-200 ppm		
		Iron	0-30 ppm		
		Nickel	0-20 ppm		
		pH	8-10		
		Arsenic	5-100 ppm		
		Chromium	5-200 ppm		
		Chlorinated Hydrocarbons	Non-detect (EPA SW-846 method 8010)		
		Water ²	500-850 g/l		
		Ammonium Chloride ²	60-200 g/l		
D002/D008	Solder ¹ Conditioner	Hydrochloric Acid ²	80-175 g/l	Corrosive Toxic	S01
		Fluoride	0-20 ppm		
		Copper	0-3,000 ppm		
		Iron	0-500 ppm		
		pH ³	≤2.0		
		Lead	5-200 ppm		
		Chlorinated Hydrocarbons	Non-detect (EPA SW-846 method 8010)		
		Water ²	500-850 g/l		
		Ammonium Chloride ²	60-200 g/l		
		Hydrochloric Acid ²	80-175 g/l		

TABLE 1 (continued)

USED SURFACE FINISHING CHEMICALS RECEIVED
FROM CUSTOMERS OR OFF-SITE MACDERMID FACILITIES FOR RECYCLING

EPA Hazardous Waste Number	Material Description	Waste Constituent	Allowable Conc. Range ⁴	Hazard	Handling Method
D001/D002/D008	Solder ⁵ Stripper	Water ² Hydrogen Peroxide ² Ammonium Bifluoride ² Chloride Copper Tin Lead, (soluble) Iron Nickel pH ₃ Chlorinated Hydrocarbons	Balance 0-190 g/l 90-300 g/l 0-1,000 ppm 0-8,000 ppm 2,000-75,000 ppm 5-100 ppm 0-200 ppm 0-20 ppm 3.5 to 6 Non-detect (EPA SW-846 method 8010)	Ignitable Corrosive Toxic	S01

¹ Solder Conditioner and Electroless Copper are not currently recycled at the Huntingdon Avenue facility. These materials are stored on-site only.

² These constituents are major components of the raw products and will not be analyzed for when waste shipments are received. They have been provided solely for the purpose to determine compatibility with other waste streams.

³ Meets the definition of corrosivity listed under 40 CFR 261.22 (a)(2).

⁴ The used surface finishing chemicals received from customers are generated almost exclusively from printed circuit manufacturing facilities. Printed circuit manufacturing facilities do not use cyanide plating baths, therefore, cyanide has not been listed under the column "Waste Constituent".

⁵ Note: Meets the definition of an oxidizer and, therefore, is also defined as a D001 hazardous waste.

TABLE 2

DESCRIPTION OF WASTES RECEIVED
FROM MACDERMID'S 245 FREIGHT STREET FACILITY

EPA Hazardous Waste Number	Material Description	Waste Constituent	Allowable Conc. Range	Hazard	Handling Method
D002	Stannous Sulfate Solution	Water ¹ Tin pH	Balance 1-10% ≤2.0	Toxic Corrosive	S01
D002	Chelated Waste Cleaner	Water ¹ Copper EDTA pH	Balance 1-20 g/l 1-25% ≤2.0	Toxic Corrosive	S01
D002	Palladium Solution	Water ¹ Palladium pH	Balance 0-100,000 ppm ≤2.0	Toxic Corrosive	S01
D002	Waste Nickel Solution	Water ¹ Nickel Lead pH	Balance 0-15,000 ppm 0-4 ppm ≤2.0	Toxic Corrosive	S01
D002	Acid Zinc Solution	Water ¹ Zinc pH	Balance 0-50,000 ppm ≤2.0	Toxic Corrosive	S01
D002/D006	Cadmium Plating Solution	Water ¹ Cadmium pH	Balance 1-500,000 ppm 1-5	Toxic Corrosive	S01
D002	Acid Copper Solution	Water ¹ Copper pH	Balance 0-100,000 ppm ≤2.0	Toxic Corrosive	S01

TABLE 2 (continued)

DESCRIPTION OF WASTES RECEIVED
FROM MACDERMID'S 245 FREIGHT STREET FACILITY

EPA Hazardous Waste Number	Material Description	Waste Constituent	Allowable Conc. Range	Hazard	Handling Method
D001/D002/F003/ F005	Waste Mixed Sols. (Non-Chlorinated)	Flash Point	≥50°F	Ignitable	S01
		pH ¹	1-8	Toxic	
		Water ¹	Balance	Corrosive	
		Xylene	This waste stream		
		Ethyl Acetate	will be a mixture		
		Ethyl Benzene	of these constituents,		
		Ethyl Ether	therefore, allowable		
		Methyl Isobutyl	concentration ranges		
		Ketone	shall not apply		
		n-Butyl Alcohol			
		Cyclohexanone			
		Methanol			
		Toluene			
D001/D002/F002	Waste Mixed Sols. (Chlorinated)	Methyl Ethyl Ketone			S01
		Isobutanol			
		Water ¹	Balance	Ignitable	
		Flash Point	≥100°F	Toxic	
		pH	4-10	Corrosive	
		Tetrachloroethylene	This waste stream		
		Trichloroethylene	will be a mixture		
		1,1,1-Trichloroethane	of these constituents,		
		Chlorobenzene	therefore, allowable		
		1,1,2-Trichloro-1,2,2,	concentration ranges		
		Trifluoroethane	shall not apply		

TABLE 2 (continued)

DESCRIPTION OF WASTES RECEIVED
FROM MACDERMID'S 245 FREIGHT STREET FACILITY

EPA Hazardous Waste Number	Material Description	Waste Constituent	Allowable Conc. Range	Hazard	Handling Method
D009	Lab. Apparatus	Mercury	≥0.2 ppm	Toxic	S01

1 These constituents which are the major components of the raw products will not be analyzed for when waste shipments are received. They have been provided solely for the purpose to determine compatibility with other waste streams.

TABLE 3

DESCRIPTION OF WASTES GENERATED ON-SITE

EPA Hazardous Waste Number	Material Description	Waste Constituent	Allowable Conc. Range	Hazard	Handling Method
D002/D004/D007/D008	Copper Etchant	Water ²	Balance	Corrosive Toxic	S01
		Ammonia ²	40-200 g/l		
		Chloride ²	100-250 g/l		
		Copper	0-200,000 ppm		
		Zinc	0-2,000 ppm		
		Tin	0-200 ppm		
		Lead	5-200 ppm		
		Iron	0-30 ppm		
		Nickel	0-20 ppm		
		pH	8-10		
		Arsenic	5-100 ppm		
		Chromium	5-200 ppm		
D002/D008	Solder ¹ Conditioner	Water ²	500-850 g/l	Corrosive Toxic	S01
		Ammonium Chloride ²	60-200 g/l		
		Hydrochloric Acid ²	80-175 g/l		
		Fluoride	0-20 ppm		
		Copper	0-3,000 ppm		
		Iron	0-500 ppm		
		pH	≤2.0		
		Lead	5-200 ppm		

TABLE 3 (continued)

DESCRIPTION OF WASTES GENERATED ON-SITE

EPA Hazardous Waste Number	Material Description	Waste Constituent	Allowable Conc. Range	Hazard	Handling Method
D001/D002/D008	Solder ^a Stripper	Water ² Hydrogen Peroxide ² Ammonium Bifluoride ² Chloride Copper Tin Lead (soluble) Iron Nickel pH ₃	Balance 0-190 g/l 90-300 g/l 0-1,000 ppm 0-8,000 ppm 2,000-75,000 ppm 5-100 ppm 0-200 ppm 0-20 ppm 3.5 to 6.0	Ignitable Corrosive Toxic	S01
D002	Acid Zinc Solution	Water ² Zinc pH	Balance 0-50,000 ppm ≤2.0	Toxic Corrosive	S01
D002	Acid Copper Solution	Water ² Copper pH	Balance 0-100,000 ppm ≤2.0	Toxic Corrosive	S01
U154/D001	Methanol	Water ² Methanol	Balance 500,000-1,000,000 ppm	Ignitable	S01
U002/D001	Acetone	Water ² Acetone	Balance 500,000-1,000,000 ppm	Ignitable	S01
D002	Chelated Waste Cleaner	Water ² Copper EDTA pH	Balance 1-20 g/l 1-25% ≤2.0	Toxic Corrosive	S01

TABLE 3 (continued)
DESCRIPTION OF WASTES GENERATED ON-SITE

EPA Hazardous Waste Number	Material Description	Waste Constituent	Allowable Conc. Range	Hazard	Handling Method
D002	Stannous Sulfate Solution	Water ² Tin pH	Balance 1-10% ≤2.0	Toxic Corrosive	S01
D001/D002/F003/ F005	Waste Mixed Solvents (Non-Chlorinated)	Water ² Flash Point pH Xylene Ethyl Acetate Ethyl Benzene Ethyl Ether Methyl Isobutyl Ketone n-Butyl Alcohol Cyclohexanone Methanol Toluene Methyl Ethyl Ketone Isobutanol	Balance ≥50°F 1-8 This waste stream will be a mixture of these constituents, therefore, allowable concentration ranges shall not apply	Ignitable Toxic Corrosive	S01
D001/D002/F002	Waste Mixed Solvents (Chlorinated)	Water Flash Point pH Tetrachloroethylene Trichloroethylene 1,1,1-Trichloroethane Chlorobenzene 1,1,2-Trichloro-1,2,2,2-Trifluoroethane	Balance ≥100°F 1-8 This waste stream will be a mixture of these constituents, therefore, allowable concentration ranges shall not apply.	Ignitable Toxic Corrosive	S01

TABLE 3 (continued)

DESCRIPTION OF WASTES GENERATED ON-SITE

EPA Hazardous Waste Number	Material Description	Waste Constituent	Allowable Conc. Range	Hazard	Handling Method
F006	Metal Hydroxide/ Sulfide Sludge	Copper Iron Aluminum Chromium Zinc Tin Lead Sulfur Fluoride Water	10-30% .5-10% .1-8% 0-8% .1-2% 0-1% 0-2% 4-12% 0-1% 0-55%	Toxic	S01
D002	Waste Nickel Solution	Water ² Nickel pH	Balance 0-100 g/l ≤2.0	Toxic Corrosive	S01
D008	Lead Fluoride Sludge	Lead Tin pH	5-1,000 g/l 0-500 g/l 5-12	Toxic	S01
D002/D006	Cadmium Plating Solution	Water ² Cadmium pH	Balance 1-500,000 ppm 1-5	Toxic Corrosive	S01

TABLE 3 (continued)

DESCRIPTION OF WASTES GENERATED ON-SITE

EPA Hazardous Waste Number	Material Description	Waste Constituent	Allowable Conc. Range	Hazard	Handling Method
D001	Vacuum Pump Oil/ Inks	Flash Point	≤140°F	Ignitable	S01
D009	Laboratory Apparatus Mercury		≥0.2 ppm	Toxic	S01

^a Note: meets the definition of an ignitable waste (D001) due to the presence of the oxidizer hydrogen peroxide.

- 1 Solder Conditioner and Electroless Copper are not currently recycled at the Huntingdon Avenue facility. These materials are stored on-site only.
- 2 These constituents are major components of the raw products and will not be analyzed for when waste shipments are received. They have been provided solely for the purpose to determine compatibility with other waste streams.
- 3 Meets the definition of corrosivity of corrosivity listed under 40 CFR 261.22(a)(2).

TABLE 4
SPOT TESTS FOR USED SURFACE FINISHING CHEMICALS

MacDermid Waste Stream	Parameter	Allowable Specification
Copper Etchant	Appearance	Deep blue homogeneous liquid at 75°F
	Specific Gravity Ammonia (Free)	1.13 minimum at 75°F Positive
Solder Conditioner	Appearance	Yellow to water white homogeneous liquid at 75°F
	pH	<3.0
	Ammonia (Liberated)	Positive
Solder Stripper	Appearance	Light brown or blue to blue green (not green) homogeneous liquid at 75°F
	pH	3.5 to 6.0
	Ammonia (Free) Ammonia (Liberated)	Negative Positive

TABLE 5

COLLECTION/SAMPLE PRESERVATION REQUIREMENTS

MacDermid, Inc.
526 Huntingdon Avenue
Waterbury, Connecticut

<u>Parameter</u>	<u>Container</u>	<u>Preservation</u>
Metals	Plastic or Glass	HNO ₃ to pH <2
pH	Plastic or Glass	Cool to 4°C
Flash Point	Plastic or Glass	Cool to 4°C
Volatile Organic Compounds	Glass w/Teflon Seal	Cool to 4°C Sodium Thiosulfate
Chloride	Plastic or Glass	Cool to 4°C
Fluoride	Plastic	None Required
Ammonia	Plastic or Glass	H ₂ SO ₄ to pH <2 Cool to 4°C
Sulfide	Plastic or Glass	Zinc Acetate Cool to 4°C
Cyanide	Plastic or Glass	NaOH to pH >12 0.6 g ascorbic acid Cool to 4°C

Table 6

ALLOWABLE WASTE STORAGE LOCATIONS,
CONTAINER TYPES, AND
HAZARD CLASSES

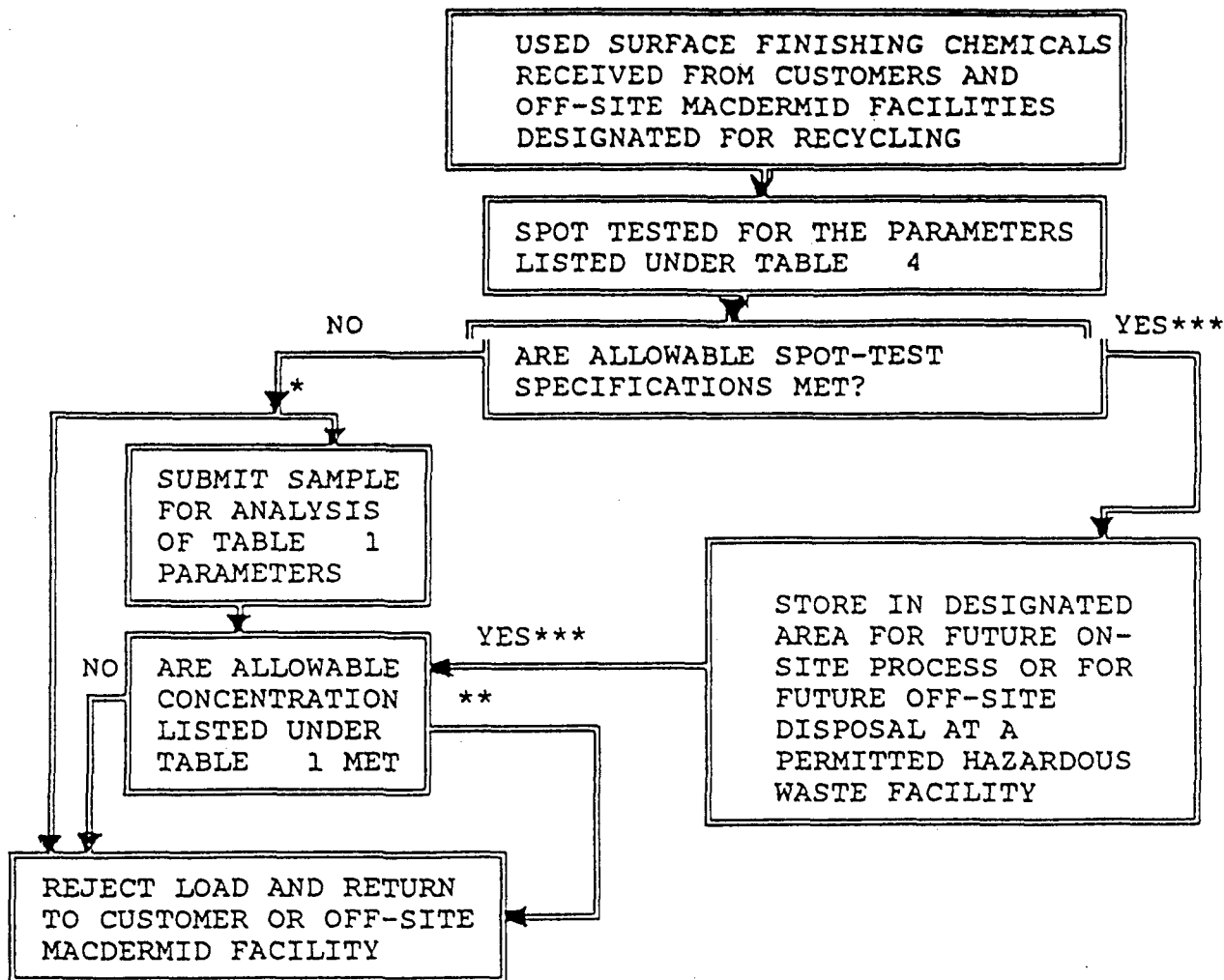
<u>Storage Area</u>	<u>Waste Stream</u>	<u>Container Type*</u>	<u>Hazard Class</u>
Main Container Storage Area And QC Area (Waste Staging Area)	Copper Etchant	A,B	Corrosive
	Solder Conditioner	A	Corrosive
	Solder Stripper	A	Corrosive
	Acid Zinc Soln.	A	Corrosive
	Acid Copper Soln.	A	Corrosive
	Palladium Soln.	A	Corrosive
	Waste Nickel Soln.	A	Corrosive
	Lead Fluoride Sludge	A	ORM-B
Combustible Storage Area	Vacuum Pump Oil/ Inks	A	Combustible Liquid
	Waste Mixed Solvents, Non- Chlorinated	A,C,D	Flammable/ Combustible Liquid
	Waste Mixed Solvents, Chlorinated	A,C,D	Flammable/ Combustible Liquid

Table 6 (Continued)

<u>Storage Area</u>	<u>Waste Stream</u>	<u>Container Type*</u>	<u>Hazard Class</u>
Flammable Material Storage Area	Waste Mixed Solvents, Non- Chlorinated	A,C,D	Flammable/ Combustible Liquid
	Waste Mixed Solvents, Chlorinated	A,C,D	Flammable/ Combustible Liquid
	Acetone	C	Flammable/ Combustible Liquid
	Methanol	C	Flammable/ Combustible Liquid
Metal Hydroxide/ Sulfide Sludge Storage Area	Metal Hydroxide/ Sulfide Sludge	E	ORM-E
Waste Storage Tanks	Copper Etchant	N.A.	Corrosive

*Container Codes:

- A 55-gallon drum, DOT specification 34.
- B 330-gallon polyethylene storage tote, DOT specification E-8225 and E-9052.
- C 5-gallon polyethylene container, DOT specification 34.
- D 55-gallon steel drum, DOT specification 17E.
- E 26-yd³ steel roll-off container.



* CASE-BY-CASE DECISION TO BE MADE BY MACDERMID, INC.

** In some instances, - waste streams which fall within the allowable concentration may be rejected, case-by-case decision to be made by MacDermid, Inc.

*** Under no circumstances will MacDermid accept for treatment or storage wastes which are excluded by the permit.

FIGURE 3.1

Flow Diagram for Accepting
or Rejecting Used Surface
Finishing Chemicals From
Customers and Off-Site
MacDermid Facilities

Appendix 1

SAMPLE WASTE CHARACTERIZATION/VERIFICATION FORMS:

- o MacDermid's Generator Certification Package, for recycleable hazardous wastes being returned to MacDermid, Inc.
- o On-Site Generated Wastes (report form)
- o Generated Wastes - Spot Test (report form)

MacDermid's Generator Certification Package,
for recycleable hazardous wastes
being returned to MacDermid, Inc.



MacDermid
INCORPORATED

245 FREIGHT STREET • WATERBURY, CT 06702 • TELEPHONE (203) 575-5700 • TELEX 4436011 • INTL. FAX 203-575-7900 • DOM. FAX 203-575-5630

March 31, 1992

an
fr
MacDermid, Inc. is authorized under Part A in Connecticut as a hazardous waste storage facility and has the capacity and the appropriate authorization to accept certain wastes for recycling generated from your facility. Should any of your manufacturing processes change so as to significantly alter the type of wastes, new waste identification forms must be submitted for approval.

Sincerely,

Cherrie D. Gillis
Manager, Environmental Affairs

CDG:dmb

RECEIVED

MAY 06 1993

DEP- Waste Management Bureau
Waste Engineering & Enforcement
Permits

AGREEMENT

This Agreement, upon receipt by MacDermid, Incorporated (MacDermid) Waterbury, CT, of your acceptance as evidenced by your signature, shall be the Agreement between MacDermid and _____ ("Company") with respect to the provisions set forth below:

1. WASTE - The term "Waste" used herein refers to hazardous or non-hazardous material generated by Company and tendered to or received by MacDermid for recycling.
2. MACDERMID WARRANTY - MacDermid shall obtain all permits, licenses and other forms of documentation required in order to comply with all existing laws, ordinances and regulations of the United States and of any state, county, township or municipal sub-division thereof, or other governmental agency which are applicable to the transportation, treatment, storage or disposal of Waste by MacDermid; provided, however, that MacDermid shall not be responsible for performing duties imposed by law upon Company, including, but not limited to, completion of the generator's portion of the hazardous waste manifest, container labelling, packaging, testing and completion of notices relating to any land disposal prohibition.
3. MACDERMID INDEMNIFICATION - Except as provided in paragraphs 4 and 5 below, Company shall be relieved of responsibility for and MacDermid shall become responsible for, and shall indemnify and hold harmless Company from any and all liability, damages, costs — including attorney fees and litigation expenses — claims, demands, and expenses of whatever type or nature, including, but not limited to, costs of responding to environmental pollution, which shall be caused by or arise out of the Waste, as follows:
 - A. If MacDermid provides or arranges transportation, such obligation to indemnify shall commence upon departure from Company's facility, (except that MacDermid shall indemnify Company for damages, costs and expenses to the extent caused by MacDermid's actions or omissions during transfer of Waste to MacDermid tanker truck);
 - B. If Company provides or arranges transportation, such obligation to indemnify shall commence upon delivery F.O.B. MacDermid's facility.

This paragraph (3) shall not apply to the extent that any such liability, damages, costs, claims, demands, and expenses caused by or arising out of Waste, are caused by the failure of the Company to comply with the Warranty set forth in section 4 below and Schedule ____ attached hereto.

4. COMPANY WARRANTY - Company hereby represents and warrants that all Waste tendered or transported to MacDermid by Company shall meet the specifications set forth in Schedule ____, attached hereto and made a part hereof, and that such Waste has been thoroughly characterized on a Generator Certification form approved by MacDermid. It is understood and agreed that Company shall prepare and execute a

MacDermid Generator Certification form for each type of Waste, including any Waste resulting from process changes that could significantly alter its composition and/or chemical or physical properties. Company further represents and warrants that all such Waste shall be prepared for shipment, labelled and packaged and in containers specified by MacDermid, in accordance with applicable regulations of the United States Department of Transportation, United States Environmental Protection Agency and/or any federal, state, and/or local agency having jurisdiction. Company further represents and warrants that it shall be responsible for properly loading packaged Waste on MacDermid's trailers if MacDermid is providing transportation. Company shall be further liable for any damages, costs of expenses to the extent caused by Company's actions or omissions during transfer of Waste to MacDermid tanker truck.

5. Company Indemnification - MacDermid shall be relieved of responsibility for, and Company shall be solely responsible for, and shall indemnify and hold harmless MacDermid against any and all liability, damages, costs — including attorney fees and litigation expenses — claims, demands, and expenses of any type or nature, including, but not limited to, costs of responding to environmental pollution, which shall be caused by or arise out of the waste as follows:

- A. Prior to departure from Company's facility, if MacDermid provides or arranges transportation;
- B. Prior to delivery F.O.B. MacDermid's facility, if Company provides or arranges transportation.

Notwithstanding the foregoing, Company further agrees to indemnify and hold harmless MacDermid from any and all loss, claims, costs (including environmental response costs), and damages, including without limitation damages to natural resources, equipment, property or person, whether that of MacDermid or its employees or any Company or its employees, caused by or resulting in any way from the failure to comply with the warranty set forth in paragraph 4 above.

6. Notice, Right to Defend - In the event any liability, damages, cost, claim, demand or other expense is asserted by a third party against MacDermid or Company for which indemnification is sought under this Agreement, reasonable notice of such claim shall be given, and the party from whom indemnification is sought shall have the right (but not the obligation) to defend such claim.
7. MacDermid Rejection - Company agrees that MacDermid, upon notice to Company, has the absolute and unqualified right to reject any shipment of Waste not in conformity with Schedule ____ or not in the container specified by MacDermid. It is further agreed and understood that MacDermid reserves the right to reject any shipment of Waste if acceptance by MacDermid of said Waste would result in a violation of any law, statute, regulation, ordinance, permit, license or order of the United States, or any agency thereof, or of

any state, county, municipality or other governmental agency, department or commission. MacDermid's acceptance of Waste under this Agreement shall not constitute a waiver of its rights or remedies for Company's failure to comply with its obligations under paragraph 4 and 5 above. Upon rejection Company shall assume full responsibility and costs for such Waste, including responsibility and costs for such further transportation, treatment or disposal as may be required, and Company shall indemnify and hold harmless MacDermid under paragraph 5 above as if such Waste had not departed Company's plant. MacDermid may, as a courtesy to Company, arrange on Company's behalf for such further transportation, storage, treatment or disposal of rejected Waste as may be appropriate; provided, however, that such arrangements shall not constitute MacDermid's acceptance of said Waste and shall not affect Company's obligation to indemnify and hold harmless MacDermid under the preceding sentence.

8. (a) Payment - As applicable, MacDermid shall invoice company for the treatment (recycling) of Waste at the rates and terms set forth by Schedule ____ attached hereto and made part hereof.

(b) Payment - Rejected Waste - Company agrees that if any Waste is rejected by MacDermid as failing to conform to the specifications set forth in Schedule ____ attached hereto, Company shall pay a minimum fee to MacDermid for such further transportation, storage, treatment or disposal as may be arranged by MacDermid, in accordance with Schedule ____ attached hereto and made a part hereof. In the event the actual costs of such transportation, storage, treatment or disposal exceed said fee, Company agrees to pay such additional costs upon demand by MacDermid.
9. Termination - MacDermid or Company may terminate this Agreement at any time upon thirty (30) days prior written notice.
10. Effect - This Agreement shall be binding upon and inure to the benefit of MacDermid, its employees, agents, successors and assigns, and Company, its employees, agents, successors and assigns.
11. Applicable Law - This Agreement shall be governed by and construed in accordance with the laws of Connecticut.
12. Construction - Captions are included herein for convenience and for reference only and shall not be considered in construing this Agreement. The Agreement is for the sole and exclusive benefit of MacDermid, Company and their respective employees, agents, successors and assigns. Nothing contained herein shall constitute an admission or a waiver of any defense of any of them in any proceeding or action brought by any other person or governmental agency. There are no third party beneficiaries of this Agreement, and this Agreement shall not be construed to create or enlarge any rights of third parties.

13. Disclaimer - MacDermid Incorporated makes no representation that it will, in fact, recycle any Waste. MacDermid may send the Waste to another permitted facility for treatment, storage or disposal.
14. Previous Agreements - All previous representations, including, but not limited to, proposal(s), purchase order(s) and/or invoice(s), either written or oral, are hereby annulled and superseded. No modification of this Agreement shall be effective unless in writing and executed by MacDermid and Company.
15. Disclosure - The terms of this Agreement may be disclosed to any governmental agency.

ACCEPTED this _____ day of _____, 199__.

Date: _____

MACDERMID, INCORPORATED

By: _____
Cherrie Gillis
Manager, Regulatory Affairs

Date: _____

By: _____

Recycling Schedule of Parameters

Schedule: A Product Code: 19110/19140/19151
 Description of Material: Continuetch 9110/Ultra Etch 20/Ultra Etch 50

Recommended U.S. DOT description as waste for return : RQ Waste Caustic Alkali Liquids NOS (Cupric Chloride), 8, UN1719, PG II

EPA Waste Number(s): D002/D008*/D004*/D007* *Used when contaminant
 Applicable State Waste Number(s): CA-123 includes the Regulatory
 TX-as specified by the TX Waste Commission Limit

The spent material will be packaged by the Company as follows:

The spent material must be returned in the same container in which the fresh material was received. If the container is not in fit condition for return, call MacDermid, Inc. for instructions.

The returned material by the Company to MacDermid, Inc. must meet the following specifications:

Color: <u>Deep Blue</u>	Physical State at 75°F: <u>Liquid</u>
pH: <u>7.5-9.5</u>	Specific Gravity at 75°F: <u>1.16 Minimum</u>
Copper: <u>110 g/l Minimum</u>	Total Alkalinity: <u>7.65 - 11.0 M</u>
Chloride: <u>4 M Minimum</u>	
Nickel: <u>5 ppm Maximum</u>	Iron: <u>20 ppm Maximum</u>
Zinc: <u>1 g/l Maximum</u>	Tin: <u>100 ppm Maximum</u>
Chromium: <u>100 ppm Maximum</u>	Lead: <u>100 ppm Maximum</u>
	Arsenic: <u>50 ppm Maximum</u>

In addition to the parameters above, the Company shall not change the composition of the spent material in any way that would:

1. Cause the EPA Waste Number noted above to be changed, or additional EPA Waste Numbers to be added to those above, or
2. Cause MacDermid, Inc. to have to obtain any new permits, or to expand existing permits, in order to legally and properly receive and/or reclaim the spent material, or treat the effluent from said reclamation, or
3. Cause unforeseen damage to MacDermid, Inc. storage or process equipment, or cause MacDermid, Inc. to have to modify their reclamation process in order to properly reclaim the material.

The minimum fee to be charged by MacDermid, Inc. to the Company, upon rejection of any shipment of spent material, as provided in the attached agreement shall be a minimum of \$10.00/gallon.

In addition to this minimum charge shall be any costs incurred by MacDermid for hazardous waste disposal costs, damage to processes or equipment, or other costs resulting from the contamination of spent material.

Recycling Schedule of Parameters

Schedule: B Product Code: 19190
Description of Material: Ultra Etch FL

Recommended U.S. DOT description as waste for return : RQ Waste Caustic
Alkali Liquids NOS (Cupric Chloride), 8, UN1719, PG II

EPA Waste Number(s): D002/D008*/D004*/D00*7 *Used when contaminant
Applicable State Waste Number(s): CA-123 exceeds Regulatory
TX-as specified by the TX Waste Commission Limit

The spent material will be packaged by the Company as follows:

The spent material must be returned in the same container in which the
fresh material was received. If the container is not in fit condition
for return, call MacDermid, Inc. for instructions.

The returned material by the Company to MacDermid, Inc. must meet the following specifications:

Color: Deep Blue Physical State at 75°F: Liquid
pH: 7.5-9.5 Specific Gravity at 75°F: 1.13 Minimum

Copper: 104 g/l Minimum Total Alkalinity: 5.9 - 9.0 M
Chloride: 3.6 M Minimum

Nickel: 5 ppm Maximum Iron: 20 ppm Maximum Lead: 100 ppm Maximum
Zinc: 1 g/l Maximum Tin: 100 ppm Maximum Arsenic: 50 ppm Maximum
Chromium: 100 ppm Maximum

In addition to the parameters above, the Company shall not change the composition of the spent material in any way that would:

1. Cause the EPA Waste Number noted above to be changed, or additional EPA Waste Numbers to be added to those above, or
2. Cause MacDermid, Inc. to have to obtain any new permits, or to expand existing permits, in order to legally and properly receive and/or reclaim the spent material, or treat the effluent from said reclamation, or
3. Cause unforeseen damage to MacDermid, Inc. storage or process equipment, or cause MacDermid, Inc. to have to modify their reclamation process in order to properly reclaim the material.

The minimum fee to be charged by MacDermid, Inc. to the Company, upon rejection of any shipment of spent material, as provided in the attached agreement shall be a minimum of \$10.00/gallon.

In addition to this minimum charge shall be any costs incurred by MacDermid for hazardous waste disposal costs, damage to processes or equipment, or other costs resulting from the contamination of spent material.

Recycling Schedule of Parameters

Schedule: E Product Code: 17595
 Description of Material: MacDermid Solder Stripper 7595

Recommended U.S. DOT Description as waste: Waste Oxidizing Substance Liquid, Corrosive NOS (Hydrogen Peroxide/Ammonium Bifluoride) 5.1, UN3098, PG II

EPA Waste Number(s): D001/D002/D008
 Applicable State Waste Number(s): CA-724, 131

The spent material will be packaged by the Company as follows:

The spent material must be returned in the same container in which the fresh material was received. If the container is not in fit condition for return, call MacDermid, Inc. for instructions. NOTE: The material shall be shipped and MUST BE returned with vented caps on the drums. These vents must be clear to allow ventilation of the material.

The returned material by the Company to MacDermid, Inc. must meet the following specifications:

Color: <u>Blue, Blue Green</u>	Physical State at 75°F: <u>Liquid</u>
<u>or Light Brown</u>	Specific Gravity at 75°F: <u>1.08 Minimum</u>
pH: <u>3.5 to 6.0</u>	
Copper: <u>5 g/l Maximum</u>	Total Organic Carbon: <u>< 1500 ppm</u>
Chloride: <u>500 ppm Maximum</u>	Peroxide: <u>4% Maximum</u>
Fluoride: <u>110 g/l Maximum</u>	Tin: <u>22.5 g/l Maximum</u>
Nickel: <u>5 ppm Maximum</u>	Lead: <u>75 ppm Maximum</u>

Possible Contaminants:

Process Contamination:

Fluoborate: 5 ppm Maximum Iron: 100 ppm Maximum Nitrates: 5 ppm

In addition to the parameters above, the Company shall not change the composition of the spent material in any way that would:

1. Cause the EPA Waste Number noted above to be changed, or additional EPA Waste Numbers to be added to those above, or
2. Cause MacDermid, Inc. to have to obtain any new permits, or to expand existing permits, in order to legally and properly receive and/or reclaim the spent material, or treat the effluent from said reclamation, or
3. Cause unforeseen damage to MacDermid, Inc. storage or process equipment, or cause MacDermid, Inc. to have to modify their reclamation process in order to properly reclaim the material.

The minimum fee to be charged by MacDermid, Inc. to the Company, upon rejection of any shipment of spent material, as provided in the attached agreement shall be a minimum of \$10.00/gallon.

In addition to this minimum charge shall be any costs incurred by MacDermid for hazardous waste disposal costs, damage to processes or equipment, or other costs resulting from the contamination of spent material.

Land Ban Material:
See Attached Restrictions

Recycling Schedule of Parameters

Schedule: F Product Code: 17526
Description of Material: MacDermid Ultra-Brite 7526

Recommended U.S. DOT Description as waste for return: Waste Hydrochloric Acid Solution, 8, UN1789, PG II

EPA Waste Number(s): D008/D002
Applicable State Waste Number(s): N/A

The spent material will be packaged by the Company as follows:

The spent material must be returned in the same container in which the fresh material was received. If the container is not in fit condition for return, call MacDermid, Inc. for instructions.

The returned material by the Company to MacDermid, Inc. must meet the following specifications:

Color: Yellow to Water White
pH: <2.0

Physical State at 75°F: Liquid
Specific Gravity: 1.06 to 1.10

Copper: 2 g/l Maximum
Chloride: 2.0 N Minimum

Acidity: 0.75 M Minimum

Fluoborate: 5 ppm Iron: 100 ppm Maximum Sulfates: 2500 ppm Maximum
Fluoride: 10 ppm Maximum Titanium Attack: 20 mils/year Maximum
Nickel: 5 ppm Maximum

In addition to the parameters above, the Company shall not change the composition of the spent material in any way that would:

1. Cause the EPA Waste Number noted above to be changed, or additional EPA Waste Numbers to be added to those above, or
2. Cause MacDermid, Inc. to have to obtain any new permits, or to expand existing permits, in order to legally and properly receive and/or reclaim the spent material, or treat the effluent from said reclamation, or
3. Cause unforeseen damage to MacDermid, Inc. storage or process equipment, or cause MacDermid, Inc. to have to modify their reclamation process in order to properly reclaim the material.

The minimum fee to be charged by MacDermid, Inc. to the Company, upon rejection of any shipment of spent material, as provided in the attached agreement shall be a minimum of \$10.00/gallon.

In addition to this minimum charge shall be any costs incurred by MacDermid for hazardous waste disposal costs, damage to processes or equipment, or other costs resulting from the contamination of spent material.

MACDERMID INCORPORATED
Waterbury, Connecticut 06702
(203) 575-5700
GENERATOR PROFILE CERTIFICATION

For Schedule: _____

Instructions: This profile must be completely filled out or it will be subject to delay in acceptance or rejection. You may use N/A for "Not Applicable" or Unk. for "Unknown"

MACDERMID INCORPORATED
Waterbury, Connecticut
EPA NO. CTD001164599
Status: Storage Facility

MACDERMID INCORPORATED
Ferndale, Michigan
EPA NO. MID005338371
Status: Storage Facility

This Certification is to be completed by the Generator for each type of recyclable material shipped to Waterbury, CT or Ferndale, MI.
APPROVAL MUST BE GIVEN PRIOR TO FIRST SHIPMENT.

A. Generator Name: _____ B. Waste Description: _____
Address: _____
Technical Contact: _____ EPA Waste No.: _____
Telephone No.: _____ CT Regulated Waste No.: _____
Facility EPA ID No.: _____

C. Typical Characteristics of Waste

Color: _____ Sp. Gravity: _____
Odor: _____ Flash Point: _____
Physical State @ 70F: _____ pH: _____
Layers: _____

D. Check Items Suspected to be present

No	Yes	No	Yes
Antimony	_____	Selenium	_____
Arsenic	_____	Silver	_____
Beryllium	_____	Thallium	_____
Cadmium	_____	Phenols	_____
Lead	_____	PCB's	_____
Mercury	_____	Dioxins	_____
Herbicides	_____	Pesticides	_____
Barium	_____	Chromium-Hex	_____

E. Other Components

No	Yes
Copper	_____
Iron	_____
Nickel	_____
Tin	_____
Zinc	_____
Cyanide	_____
Fluoride	_____

F. Solvents

No ☐
Yes ☐
Name: _____

G. Typical Chemical Composition

H. Other Contaminants

I. Anticipated Volume

Bulk: //_____/mo. ____/yr.
Drums: //_____/mo. ____/yr.

I certify that all information submitted in this and any attached documents is complete, accurate, and that all known or suspected hazards have been disclosed.

Authorized Signature

Title

Date



MacDermid
INCORPORATED

245 FREIGHT STREET - WATERBURY, CT 06702 - TELEPHONE (203) 575-5700 - TELEX 4436011 - INTL. FAX 203-575-7900 - DOM. FAX 203-575-5630

MEMO TO: MACDERMID CUSTOMERS - ENVIRONMENTAL MANAGERS
FROM: Cherrie D. Gillis, Compliance Administrator
DATE: October 4, 1990
SUBJECT: THIRD-THIRD LAND BAN
(Return of Recyclable Materials To A
MacDermid Storage Facility)

1. Third-Third Land Ban

Effects: Copper Etchant
Solder Stripper
Solder Conditioner
NMP*
9204*
Electroless Copper *

* Non-restricted waste certification.

2. TCLP (Toxicity Characteristic Leaching Procedures)

1. The EPA issued on May 8, 1990 (EFFECTIVE AUGUST 8, 1990) the Third-Third Land Ban disposal regulations. These regulations are applicable to treatment facilities and companies that generate greater than 100 kg of hazardous waste in a calendar month. They prohibit disposal of hazardous waste unless the waste meets specified treatment standards or is placed in an EPA-approved no-migration unit.

MacDermid, Inc. recycles certain hazardous waste material and under RCRA regulations, a land ban certification must accompany every manifest on a returned shipment to a MacDermid facility.

MacDermid, Inc. has formatted a land ban certification for your use. Our recommendations showing the waste codes and treatment standards are based on what the waste material should fall under as per the Recycling Schedule of Parameters. Page 1 and 2, as applicable to the category, must be completed in full & signed.

2. TCLP: (EFFECTIVE SEPTEMBER 25, 1990). EPA has included a new requirement for generators to determine all the characteristic "D" codes that apply to their wastes and re-characterize them where necessary. This requirement applies even if your waste has been listed previously as a F, K, U, or P code OR single or multiple "D" code. The revised "Characteristic" list for toxicity is attached.

MacDermid, Inc. believes the following to be accurate based on its knowledge and/or testing of spent material. Ultimate knowledge and/or testing will be the responsibility of the generator.

<u>Recyclable Product as Spent</u>	<u>TOC</u>	<u>TSS</u>	<u>W/NW</u>	<u>"D" Characterization</u>
Copper Etchant	<1%	<1%	W	D002 and/or D008* D004*/D007*
Solder Stripper 7595	<1%	<1%	W	D001/D002/D008
Solder Conditioner 7526/7533	<1%	<1%	W	D002/D008
9204	<1%	<1%	W	CR04
NMP	<1%	<1%	W	CR04
Electroless Copper (As returned under strict MacDermid parameters)	<1%	<1%	W	CR04

*Lead, arsenic and/or chromium content varies with usage.

268.42 Technology-Based Standards by RCRA Waste Code

<u>Table 2</u>		<u>Technology Code</u>	
<u>Waste Code</u>	<u>Waste Description and/or Treatment Subcategory</u>	<u>W</u>	<u>NW</u>
a. D001	Oxidizers based on 261.21 (a) (4)	DEACT	DEACT
b. D002	Acid subcategory based on 261.22 (a) (1)	DEACT	DEACT
c. D002	Other Corrosives based on 261.22 (a) (2)	DEACT	DEACT
d. D002	Alkaline subcategory based on 261.22 (a) (1)	DEACT	DEACT

268.43 Constituent Concentrations in Wastes

<u>Table CCW</u>		<u>Mg/l</u>	
		<u>W</u>	<u>NW</u>
e. D004	Arsenic	5.0	N/A
f. D008	Lead	5.0	N/A
g. D007	Chromium	5.0	N/A

The generator, must decide whether treatment standard(s) is applicable to the recyclable waste. If there is any treatment standard other than what appears above, call MacDermid prior to shipment (203) 575-7947.

Category II

Generator Name: ABC Company

Address: 1 Plaza Street

EPA I.D. Number: CTD000111222

Dobbs, CT

Manifest No.: CTF123456

If your waste falls into any category other than what is stated below, call MacDermid's Regulatory Department prior to shipment.

o o o o o o

Refer to 268.42 Technology-Based Standards - Table 2

Waste Code Legend	Waste Code	Waste Description and/or Treatment Subcategory	Technology Code Wastewater/ Non-wastewater	
a	D001	- Oxidizers based on 261.21 (a) (4)	DEACT	DEACT
b	D002	- Acid Subcategory based on 261.22 (a) (1)	DEACT	DEACT
c	D002	- Other Corrosives based on 261.22 (a) (2)	DEACT	DEACT
d	D002	- Alkaline Subcategory based on 261.22 (a)(1)	DEACT	DEACT

o o o o o o

Refer to 268.43 Constituent Concentration in Waters - Table CCW

		Waste Description and/or Treatment Subcategory	Treatment Standard Wastewater/ Non-wastewater	
e	D004	Arsenic	5.0 mg/l	N/A
f	D008	Lead	5.0 mg/l	N/A
g	D007	Chromium	5.0 mg/l	N/A

RESTRICTED WASTE CERTIFICATION/NOTIFICATION: I certify/notify under penalty of law, that I personally have examined and am familiar with the waste through analysis and testing or through knowledge of the waste to support this certification that the waste does not comply with treatment standards specified in 40 CFR 268, Subpart D. This waste must be treated by the appropriate regulatory treatment standard or in such a manner which renders it non-liquid or chemical fixation or solidification prior to land disposal. I also certify that the following waste code(s) apply to my waste.

The following must be completed by the generator for each manifested shipment containing restricted waste. Please check the appropriate boxes for your particular waste.

Treatment Standard - 40 CFR

Waste (Product) Name	Waste Code(s)	Waste Code Legend	Table 2 268.42	Table CCW 268.43	Waste Water	Non Waste Water
9110/UE50, etc.	D002/D008	c/e/f/g	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
7526/7533	D002/D008	b/f	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
7595	D001/D002/D008	a/b/f	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Signature: Bob Monahan

Date: 10/10/91

Print Name: Bob Monahan

Title: Env. Manager

Category II

Generator Name: _____

Address: _____

EPA I.D. Number: _____

Manifest No.: _____

If your waste falls into any category other than what is stated below, call MacDermid's Regulatory Department prior to shipment.

0 0 0 0 0 0

Refer to 268.42 Technology-Based Standards - Table 2

Waste Code Legend	Waste Code	Waste Description and/or Treatment Subcategory	Technology Code Wastewater/ Non-wastewater	
a	D001	- Oxidizers based on 261.21 (a) (4)	DEACT	DEACT
b	D002	- Acid Subcategory based on 261.22 (a) (1)	DEACT	DEACT
c	D002	- Other Corrosives based on 261.22 (a) (2)	DEACT	DEACT
d	D002	- Alkaline Subcategory based on 261.22 (a)(1)	DEACT	DEACT

0 0 0 0 0 0

Refer to 268.43 Constituent Concentration in Waters - Table CCW

		Waste Description and/or Treatment Subcategory	Treatment Standard Wastewater/ Non-wastewater	
e	D004	Arsenic	5.0 mg/l	N/A
f	D008	Lead	5.0 mg/l	N/A
g	D007	Chromium	5.0 mg/l	N/A

RESTRICTED WASTE CERTIFICATION/NOTIFICATION: I certify/notify under penalty of law, that I personally have examined and am familiar with the waste through analysis and testing or through knowledge of the waste to support this certification that the waste does not comply with treatment standards specified in 40 CFR 268, Subpart D. This waste must be treated by the appropriate regulatory treatment standard or in such a manner which renders it non-liquid or chemical fixation or solidification prior to land disposal. I also certify that the following waste code(s) apply to my waste.

The following must be completed by the generator for each manifested shipment containing restricted waste. Please check the appropriate boxes for your particular waste.

Treatment Standard - 40 CFR

Waste (Product) Name	Waste Code(s)	Waste Code Legend	Table 2 268.42	Table CCW 268.43	Waste Water	Non Waste Water
_____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
_____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
_____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
_____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
_____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Signature: _____

Date: _____

Print Name: _____

Title: _____

MAXIMUM CONCENTRATION OF CONTAMINANTS FOR THE TOXICITY
CHARACTERISTIC (TCLP)

<u>EPA HW</u> <u>NUMBER</u>	<u>CONTAMINANT</u>	<u>REGULATORY</u> <u>LEVEL (MG/L)</u>
D004	Arsenic	5.0
D005	Barium	100.0
D006	Cadmium	1.0
D007	Chromium	5.0
D008	Lead	5.0
D009	Mercury	0.2
D010	Selenium	1.0
D011	Silver	5.0
D012	Endrin	0.02
D013	Lindane	0.4
D014	Methoxychlor	10.0
D015	Toxaphene	0.5
D016	2,4-D	10.0
D017	2,4,5-TP (Silvex)	1.0
D018	Benzene	0.5
D019	Carbon tetrachloride	0.5
D020	Chlordane	0.3
D021	Chlorobenzene	100.0
D022	Chloroform	6.0
D023	o-Cresol	200.0
D024	m-Cresol	200.0
D025	p-Cresol	200.0
D026	Cresol	200.0
D027	1,4-Dichlorobenzene	7.5
D028	1,4-Dichloroethane	0.5
D029	1,1-Dichloroethylene	0.7
D030	2,4-Dinitrotoluene	0.13
D031	Heptachlor (and its hydroxide)	0.008
D032	Hexachlorobenzene	0.13
D033	Hexachlorobutadiene	0.5
D034	Hexachloroethane	3.0
D035	Methyl ethyl ketone	200.0
D036	Nitrobenzene	2.0
D037	Pentachlorophenol	100.0
D038	Pyridine	5.0
D039	Tetrachloroethylene	0.7
D040	Trichloroethylene	0.5
D041	2,4,5-Trichlorophenol	400.0
D042	2,4,5-Trichlorophenol	2.0
D043	Vinyl Chloride	0.2

As of AUGUST 7, 1990, treatment facilities are not permitted by EPA to accept wastes unless all "D" characteristics are fully identified and certified by the generator. (40 CFR 262.11, 264.13, 265.13, 268.7).

There are two options available for certification for TCLP:

1. Generator may use knowledge or a known analysis to determine "D" characteristics and certify the same to the treatment facility. The customer may also have the material analyzed for toxicity which must be done under the Toxicity Characteristic Leaching Procedure which has replaced the Extraction Procedure (EP) leach test.
2. The treatment facility can sample and analyze your waste upon receipt. Since MacDermid is a Storage Facility under RCRA, it will REQUIRE GENERATORS TO USE EITHER their "knowledge" of the wastes, a known analysis or TCLP to determine "D" characteristics as confirmation to MacDermid's recommendations. MacDermid does not do TCLP testing.

NOTE: Land ban notification forms and any analysis you have, must be maintained for a minimum of five (5) years.

The following information/recommendations may deviate slightly from customer to customer depending on their use of MacDermid's recyclable product(s). Although MacDermid recycles/reclaims and does not treat waste for disposal purposes, the land ban certification does pertain to its customers who ship to a MacDermid Storage Facility.

The treatment standards (both concentration-based and specified methods) are generally presented as applicable to wastewater or non-wastewater.

Definition: o Wastewaters (W)

Wastes (listed wastes, including wastes generated as a result of the mixture and derived-from rule) that contain less than 1% total organic carbon (TOC) and less than 1% total suspended solids (TSS) except for...

o Non-Wastewater (NW)

Are those wastes that do not meet the above criteria, are defined as non-wastewaters and these contain greater than or equal to 1% TOC and greater than or equal to 1% TSS.

The generator, must decide whether the waste is a wastewater or non-wastewater and so notify MacDermid on the "Notification/Certification sheet.

MACDERMID, INCORPORATED CUSTOMER NOTIFICATION AND CERTIFICATION LAND DISPOSAL RESTRICTIONS COMPLIANCE

This form meets the standard for generator restricted waste notification to MacDermid as required by 40 CFR Part 268.7.

Generator Name: _____

Address: _____

EPA I.D. Number: _____

Name of Waste Material(s): _____

Manifest No.: _____

Waste Analysis Available No ☐ Yes ☐
If yes, please attach.

DIRECTIONS FOR COMPLETING THE THIRD-THIRD LAND BAN NOTIFICATION/CERTIFICATION

This form must be used Effective August 8, 1990 with all manifested shipments to a MacDermid facility. Front and back (pg. 1 and 2) must be completed.

If the waste material falls into any waste code category other than what is stated on this form, please call MacDermid's Regulatory Department prior to shipment (203) 575-7947.

- **Category I [See below, must be completed]**

Category I reflects waste material that is not restricted by the EPA from land filling. The waste numbers that would fall into this category would be the State Regulated wastes as "CR04". Category I "UNRESTRICTED" should be completed if your waste falls into this category.

- **Category II [Page 2 must be completed]**

Category II reflects waste material that is restricted from land filling and has been given a treatment standard by EPA. This section should be completed if your waste falls into this category.

Since MacDermid ONLY ACCEPTS for recycling certain spent materials, page 2 reflect those acceptable categories that MacDermid will receive for recycling.

Category I

UNRESTRICTED WASTE CERTIFICATION/NOTIFICATION: I certify/notify under penalty of law, that I personally have examined and am familiar with the waste through analysis and testing or through knowledge of the waste to support this certification that the waste is not restricted as specified in 40 CFR 268, Subpart D and all applicable prohibitions set forth in 40 CFR 268.32 or RCRA Section 3004 (d). I also certify that the following waste code(s) apply to this waste.

Waste (Product) Name

Waste Code(s)

_____	_____
_____	_____
_____	_____
_____	_____

Signature: _____

Date: _____

Print Name: _____

Title: _____

MACDERMID, INCORPORATED CUSTOMER NOTIFICATION AND CERTIFICATION LAND DISPOSAL RESTRICTIONS COMPLIANCE

This form meets the standard for generator restricted waste notification to MacDermid as required by 40 CFR Part 268.7.

Generator Name: ABC Company

Address: 1 Plaza Street

EPA I.D. Number: CTD000111222

Dobbs, CT

Name of Waste Material(s): 9110, etc.

Manifest No.: CTF123456

Waste Analysis Available No X Yes
If yes, please attach.

DIRECTIONS FOR COMPLETING THE THIRD-THIRD LAND BAN NOTIFICATION/CERTIFICATION

This form must be used Effective August 8, 1990 with all manifested shipments to a MacDermid facility. Front and back (pg. 1 and 2) must be completed.

If the waste material falls into any waste code category other than what is stated on this form, please call MacDermid's Regulatory Department prior to shipment (203) 575-7947.

• Category I [See below, must be completed]

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• Category II [Page 2 must be completed]

Category II reflects waste material that is restricted from land filling and has been given a treatment standard by EPA. This section should be completed if your waste falls into this category.

Since MacDermid ONLY ACCEPTS for recycling certain spent materials, page 2 reflect those acceptable categories that MacDermid will receive for recycling.

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UNRESTRICTED WASTE CERTIFICATION/NOTIFICATION: I certify/notify under penalty of law, that I personally have examined and am familiar with the waste through analysis and testing or through knowledge of the waste to support this certification that the waste is not restricted as specified in 40 CFR 268, Subpart D and all applicable prohibitions set forth in 40 CFR 268.32 or RCRA Section 3004 (d). I also certify that the following waste code(s) apply to this waste.

Waste (Product) Name

Waste Code(s)

Electroless Copper

CR04-CT/ 001D-MI

Signature: Bob Manager

Date: 10/10/91

Print Name: Bob Manager

Title: Env. Manager

E F F E C T I V E I M M E D I A T E L Y

ALL waste manifested shipments being returned to MacDermid, Inc. in Waterbury, CT will require the following:

PRIOR TO ANY SHIPMENT, NON-MACDERMID CARRIERS

MUST CALL MACDERMID AND ARRANGE AN APPOINTMENT

WITH THE RECEIVING DEPARTMENT.

All waste containers are being spot tested upon arrival at MacDermid. Rejected material is being returned via the same carrier to the customer at customer's expense.

If was received from a customer is returned to MacDermid via a MacDermid vehicle and rejected during the spot test, and the MacDermid vehicle is not scheduled for return to the customer's area, MacDermid will offer the rejected material to another permitted carrier at customer's expense.

Cherrie Gillis
Manager Regulatory Affairs

CG:dmb

On-Site Generated Waste (report form)

SECTION
264.13

WASTE _____

TSDF _____ REF: NO: _____

SOURCE: _____

CHARACTERISTICS

EQUIPMENT USED TO ANALYZE

Waste Nos: _____

Color: _____

pH Meter: _____

Odor: _____

SP.GR: (Hydrometer): _____

pH: _____

Fl. Pt. (Tag CC ASTM D56-64, 1968) _____

Sp. Gr.: _____

Gas Chromatography: _____

Fl. Pt.: _____

A.A. Spectrophotometry: _____

Layering: _____

Wet Analysis (Titration): _____

Frequency of Sampling: _____

Method of Collection: _____

Land-Ban: Yes _____ No _____

METALS & CONC: _____

COMPOSITION: _____

RATIONALE: _____

Generated Wastes - Spot Test (report form)

GENERATED WASTE - SPOT TEST
(Freight Street to Huntingdon Avenue)

WASTE ID NO: _____

(3 digits)

DEPARTMENT: _____

DEPT. ACCT. NUMBER WASTE TO BE
CHARGED TO: _____

WASTE NAME: _____

TYPE SAMPLE: GRAB
COMPOSITE
RANDOM

CHARACTERISTICS

RESULTS

SPECIFICATIONS

Odor

Color

pH

Sp. Gravity

Flash Point

Metals Run if Applicable

Tin

Lead

Iron

Copper

Zinc

Cadmium

Other _____

Solvents:

I certify this waste is within specification of the written waste analysis plan for on-site generated wastes per waste ID number.

(Signature)

Date: _____

Appendix 2

A DESCRIPTION OF THE INTERNAL WASTE TRACKING SYSTEM

A Description of the Internal Waste Tracking System

The following internal waste tracking procedure shall be utilized to ensure proper waste characterization and allow for waste transfer from the on-site generating departments or areas to the on-site waste management area (a satellite storage area or the permitted hazardous waste management area).

1. Each container to be utilized to collect a specific waste material generated on-site shall be prelabeled with a waste label which will identify the Department of Transportation (DOT) classification/name of the waste being generated and a MacDermid ~~9-digit~~ identification number specific to that waste stream.
2. Each container will have an accompanying document for MacDermid personnel to identify:
 - a. Name or initials of personnel who generated the waste;
 - b. The date waste was added to the container or the date the container became full if the two dates are the same; and
 - c. Name of the waste material placed in the container.
3. Prior to the storage and/or shipment off-site of each container, a copy of the container document will be submitted to the Regulatory Department for profile verification of the required waste characterization or waste verification parameters as identified in items number 4 and 5, below.
4. All first time waste streams shall be characterized as follows: For wastes generated and recycled on-site, characterization will follow the first time customer waste stream identification procedures; For wastes generated on-site requiring off-site disposal, characterization will be conducted for those parameters identified in Table 3 of the Waste Analysis Plan. Waste characterization shall be performed utilizing one or more of the following methods:
 - a. Determined from material formulations;
 - b. By a raw material from vendor, use of vendor MSDS;
 - c. Knowledge of waste constituents as generated by personnel and testing in accordance with Table 3 for confirmation where applicable; and/or
 - d. Testing if waste constituents and/or physical characteristics are unknown. Testing for Table 3 parameters and as required by the off-site facility waste profile requirements.
5. Upon the subsequent generation of a waste stream the facility shall perform waste verification in accordance with Table 3 as applicable to ensure that the facility ~~3-digit~~ identification number is correct for the waste stream.

Appendix 3

SPOT TESTING PROCEDURES

TABLE 5.11

SPOT TEST PROCEDURES FOR USED SURFACE FINISHING CHEMICALS

MacDermid, Inc.
526 Huntingdon Avenue
Waterbury, Connecticut

Chemical

Electroless Copper

Spot Test Format

Equipment:

1. Standard laboratory equipment

Reagents:

1. Red litmus paper

Procedures:

1. Appearance

Obtain a representative sample of material to be tested. Decant approximately 150 ml. sample into a 250 ml. beaker. Examine solution for color, turbidity, and extraneous material.

2. pH

Using a pH meter standardized with pH 4 buffer, obtain and record a pH value for the sample.

3. Liberated Ammonia

- a. Add 2.0 g NaOH crystals to plastic beaker containing 20 ml. of spent solution. Suspend a moist piece of litmus and cover with a watch glass.
- b. Wait a minute. If the paper turns blue, test is positive.

TABLE 5.11 (continued)

SPOT TEST PROCEDURES FOR USED SURFACE FINISHING CHEMICALS

MacDermid, Inc.
526 Huntingdon Avenue
Waterbury, Connecticut

Chemical

Solder Stripper

Spot Test Format

Equipment:

1. Standard laboratory equipment
2. pH meter

Reagents:

1. Red litmus paper
2. Sodium hydroxide (NaOH) crystals
3. pH paper

Procedures:

1. Appearance

Obtain a representative sample of material to be tested. Decant approximately 150 ml. sample into a 250 ml. beaker. Examine solution for color; homogeneity and extraneous material.

2. pH

Using pH paper, obtain and record a pH value for the sample.

3. Free Ammonia

Wave a moistened piece of red litmus paper over incoming drum. If paper remains red, test is negative.

4. Liberated Ammonia

- a. Add 2.0 g NaOH crystals to plastic beaker containing 20 ml. of spent solution. Suspend a moist piece of litmus and cover with a watch glass.
- b. Wait a minute. If the paper turns blue, test is positive.

TABLE 5.11 (continued)

SPOT TEST PROCEDURE FOR USED SURFACE FINISHING CHEMICALS

MacDermid, Inc.
526 Huntingdon Avenue
Waterbury, Connecticut

Chemical

NMP

Spot Test Format

Equipment:

1. Standard laboratory equipment
2. Refractometer

Procedures:

1. Appearance

Decant approximately 250 ml. of the sample into a 500 ml. beaker. Examine solution for color, clarity, and extraneous material.

Allow sample to sit for one hour and reexamine. No phase separation should be evident.

2. Specific Gravity

Fill a tared 100 ml. volumetric flask with sample and weigh to the nearest 0.1 g.

Calculation: $\frac{\text{Sample Weight (g)}}{100} = \text{Specific Gravity}$

3. Water Content

Heat or cool approximately 50 ml. of the sample to 25°C.

Vacuum filter the sample into a clean, dry receiver. Make sure all filter apparatus is dry prior to filtration.

Determine refractive index to 4 decimal places with refractometer.

TABLE 5.11 (continued)

SPOT TEST PROCEDURES FOR USED SURFACE FINISHING CHEMICALS

MacDermid, Inc.
526 Huntingdon Avenue
Waterbury, Connecticut

Chemical

Solder Conditioner

Spot Test Format

Equipment:

1. Standard laboratory equipment
2. pH meter
3. Water bath
4. Ret litmus paper

Reagents:

1. NaOH crystals

Procedures:

1. Appearance

Obtain a representative sample of material to be tested. Decant approximately 150 ml. sample into a 250 ml. beaker. Examine solution for color, homogeneity and extraneous material.

2. pH

Using a pH meter standardized with pH 4 buffer, obtain and record a pH value for the sample.

3. Liberated Ammonia

- a. Add 2.0 g NaOH crystals to plastic beaker containing 20 ml. of spent solution. Suspend a moist piece of litmus and cover with a watch glass.
- b. Wait a minute. If the paper turns blue, test is positive.

TABLE 5.11 (continued)

SPOT TEST PROCEDURES FOR USED SURFACE FINISHING CHEMICALS

MacDermid, Inc.
526 Huntingdon Avenue
Waterbury, Connecticut

Chemical

Copper Etchant

Spot Test Format

Equipment:

1. Standard laboratory equipment

Reagents:

1. Red litmus paper

Procedures:

1. Appearance

Obtain a representative sample of material to be tested. Decant approximately 150 ml. sample into a 250 ml. beaker. Examine solution for color, turbidity and extraneous material.

2. Specific Gravity

Place digital density meter probe in drum and record specific gravity measurement once the reading has stabilized.

3. Free Ammonia

Wave a moistened piece of red litmus paper over incoming drum. If paper turns blue, the drum has tested positive for ammonia.

ATTACHMENT B
CONTINGENCY PLAN

Attachment B

Contingency Plan

<u>Section</u>	<u>Title</u>	<u>Page</u>
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10.1	Purpose	10-1
10.2	Initial Notification	10-7
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Attachment B

Contingency Plan

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In addition, this plan is intended to describe the actions facility personnel must take to minimize hazards to human health or the environment in the event of fires, explosions, or any unplanned sudden or non-sudden release of hazardous wastes.

A general description of the facility, including the location of hazardous waste storage areas and emergency equipment and communications, are shown on Figure 10.1.

Provided in the following sections of this plan are:

- 10.2 Initial Notifications
- 10.3 Implementation of the Contingency Plan
- 10.4 Emergency Procedures
- 10.5 Control Procedures
- 10.6 Emergency Equipment/Containment Structures
- 10.7 Evacuation Plan
- 10.8 Reporting of Emergency Incidents
- 10.9 Contingency Plan Review/Location
- 10.10 Arrangements with Local Authorities

A. Introduction

MacDermid, Inc. is located on two parcels of property north and south of Huntingdon Avenue in the Fairmont section of Waterbury, Connecticut. The southern parcel is approximately 11 acres in area on which one building houses both manufacturing and laboratory facilities. The northern parcel is approximately 42 acres in size and is mostly undeveloped except for MacDermid's vacant office building located on the eastern portion.

**US EPA New England
RCRA Document Management System
Image Target Sheet**

RDMS Document ID # 100829

Facility Name: MACDERMID INC

Facility ID#: CTD001164599

Phase Classification: R-1B

Purpose of Target Sheet:

☒ **Oversized** (in Site File) ☐ **Oversized** (in Map Drawer)

☐ **Page(s) Missing** (Please Specify Below)

☐ **Privileged** ☐ **Other** (Provide
Purpose Below)

Description of Oversized Material, if applicable:

FIGURE 10.1: EMERGENCY EQUIPMENT LOCATIONS

☒ **Map** ☐ **Photograph** ☐ **Other** (Specify Below)

*** Please Contact the EPA New England RCRA Records Center to View This Document ***

The principle business of MacDermid, Inc. is the blending or compounding of chemical materials used in metal finishing, plating on plastics, micro electronics and printed circuit industries. As an adjunct to the principle business, MacDermid reprocesses used surface finishing chemicals received from their customers and off-site MacDermid facilities for recycling. As a result of these operations, hazardous and CT-regulated wastes are generated, stored temporarily on-site and/or recycled. Ultimately all hazardous and CT-regulated wastes are removed from the site by certified waste haulers and disposed of at permitted hazardous waste disposal facilities.

The remainder of the Plan describes necessary actions and procedures to be employed in the event of an emergency at MacDermid, Inc.

Presented on Figure 10.1 is a site plan of the facility.

B. Handling Emergencies for MacDermid Incorporated

As the quantity and variety of hazardous materials increase, the likelihood of emergencies grow. Also, even relatively minor incidents, from a technical viewpoint, may seem to be major emergencies from the public's stand point. It is imperative that emergencies involving MacDermid materials be handled in a safe and organized manner so as to protect persons, property, and the environment from whatever hazards may be involved.

MacDermid's role in an emergency should be to advise and assist by providing technical information and material resources as necessary and appropriately to enable emergency personnel to reduce the hazard as much as possible.

For the safety of all concerned, it is essential that an incident be properly reported and documented, such that appropriate MacDermid personnel can be contacted as soon as possible. How to report such an emergency, how to contact appropriate MacDermid personnel, and MacDermid's responsibilities at the incident scene, are the subjects discussed in the following section of this guideline.

C. Types of Wastes Received for Recycling

The hazardous and CT-regulated wastes listed below are received from MacDermid customers or off-site MacDermid facilities for reclamation (recycling):

- Copper etchant
- Solder stripper
- Solder conditioner (stored on-site only at this time)
- Electroless Copper (stored on-site only at this time)
- N-Methyl Pyrolidone (NMP)

a. Copper Etchant:

Copper etchant is received either in bulk or in containers, and stored temporarily prior to reclamation.

Recyclable solution received in bulk is stored temporarily in the waste storage tanks, and later reclaimed on-site, or re shipped off-site for reclamation.

Recyclable solution received in containers is stored temporarily in the main container storage area, and later reclaimed on-site or reshipped off-site for reclamation.

b. Solder Stripper/Conditioner Solution/Electroless Copper

Solder stripper is received in containers, and stored temporarily prior to being reclaimed on-site. The Solder conditioner and electroless copper is sent to MacDermid, Inc., Ferndale, MI for on-site reclamation. These materials are stored in the main container storage area, and later transferred for recovery on-site or transferred to MI.

c. N-Methyl Pyrolidone (NMP)

N-Methyl Pyrolidone (NMP) is received in containers, and stored temporarily prior to being reclaimed on-site or reshipped off-site for reclamation. NMP is stored on-site in the combustible storage area.

d. Other Waste Streams

The remaining wastes generated on-site or received from MacDermid's 245 Freight Street facility are stored on-site in containers prior to being shipped off-site for final treatment/disposal at a permitted hazardous waste facility. These waste streams are primarily by-products generated from the manufacturing and development of surface finishing chemicals.

10.2 Initial Notifications

At the facility, the following personnel must be notified in case of a sudden or non-sudden release of hazardous wastes, fire or explosion. The phone number at the plant to be used by persons outside the facility (e.g. fire, police, spill contractors, etc.) is (203) 575-5700.

<u>NAME</u>	<u>HOME LOCATION</u>	<u>HOME PHONE</u>	<u>PLANT PHONE</u>
Bill Schweiker Emerg. Coord.	19 Juniper Dr. Wolcott, CT	879-2837	575-5998
Bob Ardziejaskas (Alternate)	58 Delhurst Dr. Waterbury, CT	757-6953	575-5849

The emergency coordinator and/or his alternates provide 24-hour coverage for the Huntingdon Avenue facility.

Upon approval of the Part B Permit Application, all employees at the Huntingdon Avenue facility will receive copies of the Contingency Plan, and will be briefed on any changes as they arise. Within 24-hours after a spill event, MacDermid emergency personnel will meet to discuss the actions taken and recommend remedial action changes, if necessary.

In case of an imminent or actual emergency at the plant, the Emergency Coordinator or his alternate shall be contacted first. The Emergency Coordinator shall carry out the emergency plan agreed to

to by local police, fire department, hospitals, contractors and state and local emergency response teams.

The flow diagrams in Sections 10.5.2, through 10.5.4 contain all the phone numbers of organizations or facilities that the Emergency Coordinator should contact, should the threat of imminent danger arise.

10.3 Implementation of the Contingency Plan [40 CFR Section 264.51]

The decision to implement the Contingency Plan depends upon whether or not an imminent or actual incident could threaten human health or the environment. This section outlines decision-making criteria which the Emergency Coordinator should use to define situations in which the Contingency Plan will be implemented.

(1) Fire and/or Explosion

- a. A fire
- b. The fire spreads and could possibly ignite materials at other locations on-site or could cause heat-induced explosions.
- c. The fire could possibly spread to off-site areas.
- d. Use of water or water and chemical fire suppressant could result in contaminated runoff.
- e. An imminent danger exists that an explosion could occur, causing a safety hazard because of flying fragments or shock waves.
- f. An imminent danger exists that an explosion could ignite other hazardous waste at the facility.
- g. An imminent danger exists that an explosion could result in release of toxic materials.
- h. An explosion has occurred.

(2) Spills or Material Release

- a. The spill or leak could result in the release of flammable liquids or vapors, thus causing a fire or gas explosion hazard;
- b. The spill or leak could cause the release of toxic liquids or fumes;
- c. The spill could result in on-site contamination;
- d. The spill which cannot be contained on-site could result in off-site soil contamination and/or ground water or surface water pollution;
- e. The spill is contained but is of such magnitude that it cannot be managed by on-site equipment and/or personnel; and
- f. A spill could enter the sewer system.

(3) Floods; Natural Events; Earthquakes; Hurricanes; Tornadoes

- a. The potential exists for surface water contamination.
- b. Spread hazardous waste constituents causing on-site and off-site soil and ground water contamination; and
- c. Disrupt activities at the facility and endanger health and safety.

10.3.1 Authority of Emergency Coordinator [40 CFR Section 264.55]

The Emergency Coordinator and his alternates shall be thoroughly familiar with:

- a) all aspects of this contingency plan;
- b) all operations and activities at MacDermid, Inc.;
- c) the location and characteristics of all waste stored and treated at MacDermid, Inc.;
- d) all records at MacDermid, Inc.; and
- e) the facility layout.

The Emergency Coordinator and his alternates shall have access to all parts of MacDermid, Inc. The Emergency Coordinator and his alternates shall have the authority to spend or use whatever is necessary to carry out this Contingency Plan. A file of MSDSs for materials handled on-site (as required by 29 CFR 1910.1200 and the SARA Title III requirements) are also available for use by the Emergency Coordinator.

10.4 Emergency Procedures [40 CFR Section 264.56]

Emergency procedures are the responsibility of the Emergency Coordinator or his alternate. Such procedures are specifically outlined below:

- I. If necessary, the Emergency Coordinator should activate internal facility alarms and/or communication systems to notify all facility personnel.
- II. The foreman of each department will, if necessary, evacuate all personnel within each department using pre-determined routes described in this Plan.
- III. If their help is needed, the Emergency Coordinator should notify the appropriate state and local agencies included in the emergency procedural flow diagrams.
- IV. The Emergency Coordinator must identify the character, exact source, amount, and areal extent of any released materials and assess possible hazards to human health and the environment.
- V. If the Emergency Coordinator determines there is a threat to human health or the environment outside the facility, he must report his findings to:
 - Local authorities, if evacuation of local areas is advised (see procedural flow diagrams);
 - Fire/Police Department: 911
Health Department (Waterbury) 574-6780
 - Connecticut Department of Environmental Protection
Emergency Response: (203) 566-3338, and 566-4633;
State Police: Bethany (203) 756-8069; and
 - National Response Center telephone number: 1-800-424-8802.

The following information must be provided to the DEP and the National Response Center when contacted:

- Name and telephone number of reporter;
- Name and address of facility;
- Time and type of incident (e.g. release, fire);
- Name and quantity of material(s) involved, to the extent known;
- The possible hazards to human health or the environment outside the facility; and
- The extent of injuries, if any.

10.5 Control Procedures

10.5.1 Emergency Procedures

The MacDermid, Inc. hazardous waste training program includes personnel training for emergency situations. Potential accidents fall under the following classifications:

- (1) Fire and/or Explosions;
- (2) Spill and/or Release; and
- (3) Potential Flood.

This section of the report outlines particular emergency control procedures. Immediately following the text of Sections 10.5.2, 10.5.3, and 10.5.4 are procedural flow diagrams for each of the emergencies listed above. The text preceding each chart provides more detailed information for handling each type of emergency. The types of hazardous wastes stored at MacDermid, Inc. are described along with their associated hazards in Table 10.1.

TABLE 10.1

WASTE IN STORAGE

Substance in Storage

Contingency Plan

Copper Etchant

Life Hazard: Ingestion is corrosive to the digestive tract. Irritating and corrosive to body tissues. Excessive inhalation of vapors is irritating to the mucous membranes of the respiratory tract and can result in headache, coughing, lung congestion and difficulty in breathing. Liquid contact with eyes can result in eye damage.

Personal Protection: Use splash-proof, chemical resistant safety goggles, and where needed, a faceshield. Use rubber suit, boots, gloves, apron, or other protective clothing to prevent contact.

Storage: Store in leak-proof containers or tanks. Protect against physical damage.

Fire Fighting: Use media appropriate to surrounding fire conditions. Use cold water spray to control vapors and cool fire-exposed containers. When heated, material will emit vapors which necessitates respiratory and eye protection for fire fighters. Use protective clothing.

Solder Stripper and Conditioner Solution

Life Hazard: Irritants of the eyes, mucous membranes and skin. Vapors/mists Solution can irritate upper respiratory tract and result in coughing, burning of the throat, choking sensation and if inhaled deeply, pulmonary edema. Ingestion can cause burns and possible laryngeal spasm.

Personal Protection: Use rubber gloves or gauntlets, apron, boots, long sleeve shirt, body suit, etc. Use chemical resistant safety goggles and/or face shield for eye protection against splashing of acid.

Storage: Store in leak-proof containers or tanks. Protect against physical damage. Do not store acids with solvents.

Fire Fighting: Select extinguishing media suitable for surrounding fire. Use a water spray to cool exposed containers to prevent rupture. Nonflammable, but acid can react with many metals to produce hydrogen gas. Neutralize acid with limestone, slaked lime or soda ash, to minimize formation of hydrogen gas.

TABLE 10.1 (continued)

WASTE IN STORAGE

Substance in Storage

Contingency Data

Flammable Solvents (chlorinated and non-chlorinated)

Life Hazard: Incoordination and impaired judgement may occur at vapor exposures from 300-1,000 ppm. Dizziness, loss of consciousness and even death can occur at increasing levels of exposure. When involved in fire, emits highly toxic and irritating fumes. Eye and respiratory irritant. Extreme inhalation of vapors may cause death by paralysis of the respiratory center.

Personal Protection: Wear full protective clothing including safety goggles.

Storage: Store in a cool, dry, well ventilated location, away from any area where the fire hazard may be acute.

Fire Fighting: Use dry chemical foams, or carbon dioxide since water may be ineffective. But water should be used to keep fire exposed containers cool. If leak or spill has not ignited use water spray to disperse the vapors and to protect personnel attempting to stop a leak. Water spray may be used to flush spill away from exposures.

Metal Hydroxide/Sulfide Sludge

Life Hazard: Ingestion can cause intestinal disorders and even death. Metal constituents can cause dermatitis with skin contact. May emit toxic fumes during fire.

Personal Protection: Wear full protective clothing including goggles, apron and gloves.

Storage: Store in cool, dry, well-ventilated area, away from acute fire hazards. Incompatible with alkalis.

Fire Fighting: Use water spray to keep fire-exposed containers cool. Essentially non-flammable; if ignited, blanket fire with sand, G-1 powder or powdered talc.

Electroless Copper and Conditioner

Life Hazard: Toxic by ingestion. Ingestion causes burning in the stomach and vomiting. Large doses can be fatal. Can be a skin irritant.

Personal Protection: Wear full protective clothing including safety goggles and gloves.

Storage: Store in leak proof containers or tanks. Protect against physical damage.

TABLE 10.1 (continued)

WASTE IN STORAGE

Substance in Storage

Contingency Data

Electroless Copper and
Conditioner (cont.)

Fire Fighting: Use media appropriate to surrounding fire conditions. Use a water spray to cool exposed containers. Essentially non-flammable.

NMP

Life Hazard: Low order of toxicity; minor irritant to skin. Ingestion may cause gastric disturbance.

Personal Protection: Wear goggles, gloves and apron.

Storage: Store in leak proof containers away from acute fire hazards.

Fire Fighting: Use alcohol foam, CO² or dry chemical. Use a water spray to cool exposed containers. Self contained breathing equipment should be used in a fire situation in enclosed areas.

Waste Acid Plating Solutions

Life Hazard: Ingestion is corrosive to digestive tract. Irritating and corrosive to body tissues. Excessive inhalation of vapors is irritating to the mucous membranes of the respiratory tract and can result in headache, coughing, lung congestion and difficulty in breathing. Liquid contact with eyes can result in eye damage.

Personal Protection: Use splash-proof, chemical resistant safety goggles, and where needed, a face shield. Use rubber suit, boots, gloves, apron, or other protective clothing to prevent contact.

Storage: Store in leak-proof containers or tanks. Protect against physical damage.

Fire Fighting: Use media appropriate to surrounding fire conditions. Use cold water spray to control vapors and cool fire-exposed containers. When heated, material will emit vapors which necessitates respiratory and eye protection for fire fighters. Use protective clothing.

Waste Plating Solutions
(non-acidic)

Life Hazard: Ingestion can cause intestinal disorders and even death. Metal constituents can cause dermatitis with skin contact. May emit toxic fumes during fire.

Personal Protection: Wear full protective clothing including goggles, apron and gloves.

TABLE 10.1 (continued)

WASTE IN STORAGE

Substance in Storage

Waste Plating Solutions
(non-acidic) (cont.)

Contingency Data

Storage: Store in cool, dry, well-ventilated area, away from acute fire hazards. Incompatible with alkalies.

Fire Fighting: Use water spray to keep fire-exposed containers cool. Essentially non-flammable; if ignited, blanket fire with sand, G-1 powder or powdered talc.

10.5.2 Fire and/or Explosion

The container storage and handling areas and the tank storage area can all be easily accessed by fire fighting and other emergency vehicles and equipment.

If a fire breaks out, concentration will be placed on contacting local fire fighting officials and the orderly evacuation of the affected area(s).

The following actions will be taken in the areas affected by the fire or explosion:

- (1) Fire doors in buildings will be closed.
- (2) Hazardous work in all areas will be shut down immediately.
- (3) All material transfer operations will be shut down, as necessary and practical.
- (4) The area will be cleared of all personnel not actively involved in fighting the fire. These persons are to report to the designated rally points for accountability.
- (5) All injured persons will be removed and medical treatment will be administered by qualified personnel.

The facility receptionist will be called and advised not to accept any outside calls unless absolutely necessary so that the phone lines remain free to handle only emergency calls.

Area or plant evacuation will be necessary in case of major fire or explosion. All personnel have been trained in evacuation procedures and means of exit from their respective work areas.

Until evacuation is signaled, personnel who are not in an affected area will stay in their respective work areas. Contract personnel and visitors will be cleared from the area and instructed to report to the Production Manager's Office.

The Emergency Coordinator will be responsible for determining if personnel who are not in an affected area can stay in their respective work area. Supervisory personnel of unaffected areas will stay with their personnel and be ready to evacuate and account for the persons under their supervision.

An "all clear" signal will be given when the fire has been extinguished and the safety of personnel is no longer endangered. The Emergency Coordinator will determine when the emergency has passed and the "all clear" signal can be given. All emergency equipment used in the emergency must be cleaned and fit for use prior to resumption of plant operation in the affected areas. The following flow chart will be used in the event of a fire and/or explosion.

EMERGENCY PROCEDURE

FIRE AND/OR EXPLOSION

CONTACT EMERGENCY COORDINATOR AND/OR ALTERNATES.

- 1) Emergency Cor: Bill Schweiker PLANT PHONE: 575-5998 HOME PHONE: 879-2837
2) ALTERNATE - Bob Ardziejaskas PLANT PHONE: 575-5849 HOME PHONE: 757-6953

BEEPER NUMBERS:

- 1.) 1-800- 802-8761
2) 1-800- 802-0458

PERSONNEL
INJURED?

YES

NO

EMERGENCY COORDINATOR OR ALT. CONTACTS THE FOLLOWING:

HOSPITAL: Waterbury (573-6000)

HOSPITAL: St. Mary's (574-6000)

AMBULANCE: Champion (754-3179)

POISON CONTROL CENTER: (574-6011)

IF NECESSARY, THE EMERGENCY COORDINATOR
SHOULD ACTIVATE INTERNAL FACILITY ALARMS
AND/OR COMMUNICATION SYSTEMS TO NOTIFY
ALL PERSONNEL OF EVACUATION.

- 1) FIRE DOORS IN BUILDING WILL BE CLOSED.
- 2) HAZARDOUS WORK IN ALL AREAS WILL BE SHUT DOWN IMMEDIATELY.
- 3) ALL FEED LINES AND ADDITIONAL EQUIPMENT WILL BE SHUT DOWN, AS NECESSARY AND PRACTICAL.
- 4) THE AREA WILL BE CLEARED OF ALL PERSONNEL NOT ACTIVELY INVOLVED IN FIGHTING THE FIRE. THESE PERSONS ARE TO REPORT TO THE DESIGNATED RALLY POINTS FOR ACCOUNTABILITY.

(CONTINUED ON NEXT PAGE)

IDENTIFY CHEMICALS INVOLVED, CHECK INITIAL EMERGENCY
PROCEDURE FOR SPECIFIC CHEMICAL IN TABLE 10.1

THE EMERGENCY COORDINATOR MUST IDENTIFY THE
CHARACTER, EXACT SOURCE, AMOUNT, AND EXTENT
OF ANY RELEASED MATERIAL AND ASSESS POSSIBLE
HAZARDS TO HUMAN HEALTH OR THE ENVIRONMENT

CAN FIRE OR EXPLOSION BE HANDLED
WITH ON-SITE EQUIPMENT?

YES

NO

FACILITY EMERGENCY CREWS
EXTINGUISH FIRE/SECURE AREA

EMERGENCY COORDINATOR OR ALT. CONTACTS:
FIRE DEPARTMENT: (203) 753-3131 (911)
CONNECTICUT DEP: 566-3338 OR 566-4633
POLICE DEPARTMENT: (203) 574-6911 (911)
STATE POLICE: (203) 756-8069 Bethany
WATERBURY HEALTH DEPT: 574-6780

CAN SPILLS RELEASES AND/OR
WASH WATERS BE CONTAINED?

YES

NO

CLEAN-UP OPERATION INITIATED

FOLLOW SPILL PROCEDURES

INCIDENT REPORT
SUBMITTED

EVENT CONCLUDED

10.5.3 Spills

In the event of a major emergency involving a chemical spill, the following general procedures will be used for rapid and safe response and control of the situation.

A. Response

Each of the group leaders has been informed of the following procedures and everyone should be familiar with them.

1. In the event of a spill of any type or quantity, the group leader is to be informed immediately, if possible.
2. The group leader will dial 7998 for the switchboard operator and tell her to page "Code Red-Huntingdon" or "Code Red-Freight Street".
3. This page will be given first priority; nothing will precede it. The group leaders, every one of them, will report to the Production Manager's office whether or not he is there.
4. People who will respond are John Miele, Bill Schweiker, Bob Ardzijauskas, Bob Newman, Dave Howe, and John Alperin. While everyone may not be needed, we will at least have established a command post and a reserve of knowledge to respond to the spill and if notification of appropriate outside agencies is required.
5. The person responsible for the spill has several objectives:

First - Contain the spill as best as possible and determine, if possible, product involved.

Second - Block the area

to prevent

tracking the material. If spill occurs near a storm drain, emergency personnel will cover

the drain with plastic sheets and secure the sheets with speedy dry or build a berm around the drain with speedy dry.

Third - Evaluate the spill situation for the possibility of incompatibility problems.

Four - Make the notification to the group leader and accompany the group leader to the meeting point.

6. Regardless of who or what or any questions, we are all responsible for clean up if needed. This will be decided by whomever assumes control at the command post.

IN ACCORDANCE WITH STATE REGULATIONS, ALL SPILLS OR MATERIAL RELEASES MUST BE REPORTED IMMEDIATELY TO THE CONNECTICUT DEP SPILL EMERGENCY RESPONSE LINE (203) 566-3338. THIS REPORTING WILL BE DONE BY THE SAFETY/REGULATORY COMPLIANCE DEPARTMENT.

B. Guidelines

For all large spills or serious leaks, the following guidelines will be followed as closely as possible.

1. If a leak develops or a spill emanates from a waste storage area, the person discovering the discharge will leave the immediate area and contact the Emergency Coordinator. The Emergency Coordinator will obtain the following information:
 - a. Person(s) injured and seriousness of injury.
 - b. Location of the spill or leak, material involved, and source.
 - c. The approximate amount spilled, an estimate of the liquid and/or gas discharge rate, and the direction the liquid flow or gaseous cloud is moving.
 - d. Whether or not a fire is involved.

- e. Possible incompatible wastes or virgin materials in the spill area.

2. Next, the Emergency Coordinator will:

- a. Initiate evacuation of the hazard area. For small spills or leaks, isolate at least 50 ft. in all directions. For large spills, initially isolate at least 100 ft. in all directions and keep all personnel upwind of spill.
- b. Call the fire department or ambulance for any injured persons. It may be helpful to instruct the caller in initial first aid procedures. Then call the hospital.
- c. Call the fire department if a fire is involved that cannot be extinguished by plant personnel. Fight a small fire with dry chemicals, carbon dioxide, or foam, and large fires with water spray, fog, or foam. Keep heat-exposed containers cooled with water spray and remove them from the fire if possible. IF A HISSING SOUND COMES FROM A VENTING DEVICE OR THE DRUM BEGINS TO DISCOLOR, WITHDRAW FROM THE AREA IMMEDIATELY.
- d. Dispatch emergency personnel to the site to take the appropriate action.
- e. Contact the proper authorities if the spill or release is large. Contact local authorities first so that, if necessary, downstream water users and/or persons downwind of the vapor can be notified and, if necessary, evacuated. If a large spill occurs, the initial evacuation area downwind should be 0.2 mile long (1000 feet), by 0.1 mile wide (500 feet). If a tank containing waste becomes involved in a fire, isolate an area one-half mile in all directions.

3. Spill Clean-up

Chemical spills will be cleaned up as quickly as possible after the incident. The Emergency

Response Coordinator will direct all clean-up operations. All clean-ups will be conducted in accordance with all federal, state and local regulations. All clean-up personnel will be required to use the proper protective clothing and equipment during clean-up operations.

- a. Make sure all unnecessary persons are removed from the hazard area.
- b. Put on protective clothing and equipment.
- c. If flammable waste is involved, remove all ignition sources, and use spark and explosion proof equipment and clothing in containment and clean-up.
- d. If possible, try to stop the leak. Special materials will be kept on-hand for temporary repairs.
- e. Remove all surrounding materials that could be especially reactive with the materials in the waste. Determine the major components in the waste at the time of the spill.
- f. Use absorbent pads, booms, earth, sandbags, sand, and other inert materials to contain, divert and clean up a spill if it has not been contained by a dike or sump. Most spills contained within a dike or sump can be pumped back into the appropriate storage tank or drum. All clean up residues will be stored in a 17E/17H open head drum and transferred to the appropriate waste storage area, if characteristic of waste is known. Unknown waste material will be stored in the container storage area and isolated from all containers by surrounding the drum(s) with temporary dike of booms, sandbags, etc.
- g. Procedure for Organic Solvent Spills (includes halogenated solvents)
 - (1) Soak up small spills with Speedi-Dri or Vermiculite.

- (2) Wear protective equipment including, but not limited to rubber gloves, and boots, protective suits and organic vapor respirators.
- (3) Do not enter confined areas without **SELF-CONTAINED BREATHING APPARATUS**.
- (4) Spent or used absorbent will be shoveled into approved 17E/17H open-head drums and stored in the appropriate waste storage area, depending on the type of spill, for subsequent disposal per state and federal regulations.

h. Procedure for Acid Spills

- (1) All acid spills will be neutralized with bagged lime or soda ash or other appropriate material.
- (2) Same procedures as "g" above will apply, regarding protective equipment entering confined areas and spent absorbents.

i. Decontamination Procedures

Spills which occur in the main plant building will be collected and appropriately managed. Area decontamination will occur following material removal. Area decontamination will utilize an appropriate decontamination solution. Reuse of the area will not resume until the area has been decontaminated, inspected and determined fit for reuse.

Spills outside the facility will have to be reviewed on a case-by-case basis to determine the extent and degree of decontamination and certification sampling. Approval will be obtained from the Department of Environmental Protection on all clean up activities outside the facility building.

4. In the event that a spill results in soil contamination, the Emergency Coordinator will contact:

HRP Associates, Inc.
167 New Britain Avenue
Plainville, Connecticut 06062
(203) 793-6899

HRP Associates will dispatch specially trained geologists and environmental engineers to coordinate clean-up to prevent contamination from reaching ground water. The soil will be removed by a licensed hazardous waste transporter to a permitted disposal site. Soil samples will be analyzed and soil removed until all contamination is removed. In conjunction with DEP, MacDermid, Inc. will determine if ground water sampling/monitoring is required. If it is, HRP Associates will submit a sampling/monitoring plan for DEP approval. Further actions will be coordinated with DEP.

5. The following flow chart will be used in the event of a spill and/or release of hazardous material.

10.5.3.1 In Case of Serious Injury

1. Alert other persons in the area by voice.
2. Go to the nearest phone - dial 7998 to reach the MacDermid operator.
3. Tell the operator that you are reporting a serious injury and give the following information:
 - a. Your name.
 - b. As much information as you have on the nature of the injury.
 - c. The exact location of the injured person.

- d. An exact location of where our employee will meet the ambulance.
- e. An indication of whether any first aiders are on the scene.

Do not hang up unless told to do so. If for any reason the operator does not pick up, dial 9-911 and give the same information to the city dispatcher.

At the same time this emergency call is being made:

- 4. At least one person must stay with the injured employee. If the injury is from chemical exposure to the skin or eyes, assist the injured person to an eyewash/shower and flush the affected area with water for at least 15 minutes. If the injured person is in an area where he/ she is in danger of further injury, try to remove the hazard. If this is not possible, move the injured person. If possible, the injured person should be moved only by a trained first aider.
- 5. At least one person should locate trained first aider(s) to further assist and monitor the injured person.
- 6. At least one person must go to the street at the entrance that gives the most direct access to the injured person and direct the ambulance crew to the injured person.
- 7. Notify the top manager on-site of the injury.
- 8. If the injury was due to a fire or chemical spill, follow the procedures for those emergencies also.

10.5.3.2 Follow Up

Within 24 hours after a spill event, MacDermid emergency response personnel will meet to discuss what happened and how to improve procedure, if necessary. Any changes required will be added to the Contingency Plan. All outside authorities (i.e. police, fire, LEPC, etc.) will be notified of the modifications.

EMERGENCY PROCEDURE

SPILL AND/OR RELEASE OF HAZARDOUS MATERIAL

CONTACT EMERGENCY COORDINATOR AND/OR ALTERNATES.

- 1) Emergency Cor - Bill Schwieker PLANT PHONE: 575-5998 HOME PHONE: 879-2837
- 2) ALTERNATIVE - Bob Ardziejaskas PLANT PHONE: 575-5849 HOME PHONE: 757-6953

BEEPER NUMBERS:

- 1) 1-800- 802-8761
- 2) 1-800- 802-0458

PERSONNEL
INJURED?

YES

NO

EMERGENCY COORDINATOR OR ALT. CONTACTS THE FOLLOWING:

HOSPITAL: WATERBURY (573-6000)
HOSPITAL: ST MARY'S (574-6000)
AMBULANCE: CHAMPION (754-3179)
POISON CONTROL CENTER: (574-6011)

IDENTIFY CHARACTER OF SPILLED CHEMICAL, CHECK INITIAL
EMERGENCY PROCEDURE FOR PARTICULAR CHEMICAL IN
TABLE 10.1

IS SPILL SMALL ENOUGH
TO BE HANDLED ON-SITE?

(CONTINUED ON NEXT PAGE)

YES

NO

CONTAIN SPILL,
CLEAN-UP SPILLED
MATERIAL, NOTIFY
CT DEP OF ACTIONS

EMERGENCY COORDINATOR OR ALTERNATE CONTACTS:

FIRE DEPARTMENT:	(203) 753-3131 (911)
CONNECTICUT DEP:	(203) 566-3338 OR 566-4633
POLICE DEPARTMENT:	(203) 574-6911 (911)
STATE POLICE:	(203) 756-8069 Bethany
WATERBURY HEALTH DEPT.:	(203) 574-6988
LEPC:	(203) 597-3450

HAS SPILL CON-
TAMINATED SUR-
ROUNDING SOIL

YES

NO

EMERGENCY COORDINATOR OR ALTERNATE CONTACTS THE
FOLLOWING:

HRP ASSOCIATES, INC.
167 NEW BRITAIN AVENUE
PLAINVILLE, CT 06062
(203) 793-6899

HAS SPILL REACHED
OR THREATENED
NAVIGABLE WATERS?

(CONTINUED ON NEXT PAGE)

YES

NO

EMERGENCY COORDINATOR OR ALTERNATE CONTACTS THE FOLLOWING:

U.S. EPA REGION I

RESPONSE CENTER

(24-hour emergency number)

(617) 223-7265

NATIONAL RESPONSE CENTER

(800) 424-8802

SPILL CONTAMINATED
MATERIAL CLEANED-
UP AND PROPERLY
DISPOSED.

SPILL INCIDENT
REPORT SUBMITTED

EVENT CONCLUDED

10.5.4 Floods

Due to the geographic location of the MacDermid Corporation facility the potential for flooding exists only if greater than a 100 year flood occurs. If such a flood occurs, the following steps should be taken:

1. Check with the National Weather Service or the Army Corps of Engineers for a projected flood crest.
2. If the crest will result in less than one foot of water in the drum area, the area will be diked with sandbags up to a level one foot over the projected level.
3. If the crest will result in more than one foot of water in the drum area, the waste will be removed to a waste disposal facility.
4. The following flow chart will be used in the event of a spill and/or release of hazardous materials.

10.6 Emergency Equipment/Containment Structures [40 CFR Section 264.52(e)]

Location of emergency equipment is shown on Figure 10.1 and briefly described on Table 10.2. All existing equipment should be periodically checked and maintained.

The hazardous waste materials stored on-site and associated fire fighting equipment and techniques, personnel safety equipment needs, and potential health hazards are described in Table 10.1.

Spills and leaks from the container storage and handling areas, tank storage areas, loading/unloading areas, containment pit, and treatment area will be contained by virtue of specially designed containment systems. All wastes managed in each storage area at

POTENTIAL FOR FLOOD

CONTACT EMERGENCY COORDINATOR AND/OR ALTERNATES.

- | | | |
|-------------------------------------|-----------------------|----------------------|
| 1) EMERGENCY COORD. - Bill Schweik | PLANT PHONE: 575-5998 | HOME PHONE: 879-2837 |
| 2) 1ST ALTERNATE - Bo Ardziejauskas | PLANT PHONE: 575-5849 | HOME PHONE: 757-6958 |
| | | HOME PHONE: . |

BEEPER NUMBERS:

- 1) 1-800-802-8761
- 2) 1-800-802-0458

CHECK WITH THE NATIONAL WEATHER SERVICE FOR A PROJECTED FLOOD CREST.

NAT'L WEATHER SERVICE (RIVER FORECAST) (203) 240-3514

IF THE CREST WILL RESULT IN LESS THAN ONE FOOT OF WATER IN THE WASTE STORAGE AREA(S), THE AREA WILL BE DIKED WITH SANDBAGS UP TO A LEVEL OF ONE FOOT OVER THE PROJECTED LEVEL.

IF THE CREST WILL RESULT IN MORE THAN ONE FOOT OF WATER IN THE WASTE STORAGE AREA(S), THE WASTE WILL BE REMOVED TO A SECURE LOCATION.

IF THE WASTE CANNOT BE CONTAINED,
SEE THE SPILL FLOW CHART

TABLE 10.2
EMERGENCY EQUIPMENT

<u>Item (Amount on Hand)</u>	<u>Description/Capabilities</u>	<u>Location</u>
Absorbent Material (50-40 lb bags)	Clay-like material used to absorb and contain spill of liquid material.	See Figure 10.1
Fire Extinguishers (114)	Wall-mounted portable fire fighting apparatus. The following types of fire extinguishers are used: ABC Dry Chemical - for all types of fires.	See Figure 10.1
Telephone System/Paging System/Beepers (9 in hazardous waste storage areas)	Capable of internal and external communication.	See Figure 10.1
Rubber Gloves (30 pairs in spill boxes)	Rubber gloves for protection against harmful materials	Throughout Facility, including spill boxes
Goggles and Protective Glasses	Plastic eye covering used for protection from splashes and flying objects	Throughout Facility, including spill boxes
Shovels (6)	Tool having a broad blade or scoop attached to a long handle, used for spill clean up	See Figure 10.1 (in spill boxes)
Scott Air Pack (4)	NIOSH approved; self-contained breathing apparatus providing 30 minutes of portable oxygen for working in toxic environments	See Figure 10.1 (in spill boxes)
Emergency Shower (31) Eye Wash (33)	Provide flooding sprays of potable water from a height of approximately 7' to flush chemicals splashed onto body	See Figure 10.1
Respirators (4) Cartridges (12)	Disposable cartridges of fiber and charcoal filters to remove particulates and certain toxics from air before inhalation.	See Figure 10.1 (in spill boxes)

TABLE 10.2 (continued)
EMERGENCY EQUIPMENT

<u>Item</u>	<u>Description/Capabilities</u>	<u>Location</u>
First Aid Kit (5)	Wall mounted cabinet containing bandages, aspirins, other first aid equipment used for assisting injured workers	See Figure 10.1
Chemical Suits (4)	Protective clothing designed for full body protection against splashes of hazardous liquids	See Figure 10.1 (in spill boxes)
Fire Alarm System	Electronic, wall-mounted fire alarm box for signaling local alarm only.	See Figure 10.1
Emergency Sprinkler System	Heat activated system on ceilings throughout facility designed to quench facility fire	In all hazardous Waste Storage Areas
Walkie-Talkies (1)	Hand held communications devices which are battery operated	See Figure 10.1
High Level Alarms (3)	Float switches in waste storage tanks which activate an audible alarm when activated	Waste Storage Tanks
Water and Air Pumps (3)	Portable pumps which are used to remove accumulated liquid material.	See Figure 10.1

MacDermid, Inc. have been determined to be compatible, therefore, segregation of wastes and clean-up of a spill/leak/fire is not a concern.

10.6.1 Emergency Equipment Cleaning

When any of the emergency equipment shown on Table 10.2 is used in the clean-up/ mitigation of a hazardous waste release, this equipment must be cleaned and replenished (if necessary) as soon as possible. Cleaning of equipment will be in accordance with manufacturers' instructions under the direction of the Plant Manager.

All material used in the cleaning of equipment contaminated with hazardous waste and all single use or unsalvageable emergency equipment will be placed in an appropriate container, manifested and transported to a permitted hazardous waste disposal facility.

The Emergency Coordinator will ensure that after use in the implementation of this Contingency Plan that all emergency equipment and systems described in this plan are cleaned or refurbished and fit for use before resumption of facility operation.

10.7 Evacuation Plan

10.7.1 On-Site Evacuation Procedures

All emergencies require prompt and deliberate action. In the event of any major emergency, it will be necessary to follow an established set of procedures. Such established procedures will be followed as closely as possible; however, in specific emergency situations, the Emergency Coordinator may deviate from the procedures to provide a more effective plan for bringing the situation under control. The Emergency Coordinator is responsible for determining which emergency situations require plant evacuation.

MacDermid, Inc. employs an internal telephone and paging system. Specific instructions can be given over the facility's paging system. Key plant personnel can be contacted through the internal telephone and paging system. Total plant evacuation is initiated only by an Emergency Coordinator.

In the event plant evacuation is called for by the Emergency Coordinator, the following actions will be taken:

1. The signal for plant evacuation will be activated (warning followed by instructions over paging system).
2. All vehicle traffic within the plant will cease, to allow safe exit of personnel and movement of emergency equipment.
3. All personnel, visitors and contractors will immediately leave the facility area.

4. No persons shall remain or re-enter the location unless specifically authorized by the person(s) calling for evacuation. In allowing this, the person in charge assumes responsibility for those persons within the perimeter.
5. All persons will be accounted for by their respective Supervisors. Supervisors will designate certain doors as the safest exits for his/her employees and will also choose an alternate exit if the first choice is inaccessible. To assist in this endeavor, the Emergency Coordinator will use the internal telephone system to call the Supervisors to inform them of the nature of the emergency. If a supervisor is not present, all employees will exit through the designated emergency or alternate exits as posted on the emergency route map in their respective work area.
6. During exit, Supervisors should try to keep his/her group together. Exit routes and rally points for specific areas are shown on Figure 10.7.
7. No attempt to find persons not accounted for will involve endangering lives of others by re-entry into emergency areas.
8. Re-entry into the area will be made only after clearance is given by the Emergency Coordinator. At his direction, a signal or other notification will be given for re-entry into the plant.
9. In all questions of accountability, Supervisors will be held responsible for those persons reporting to them. Visitors will be the responsibility of those employees they are seeing. Contractors are the responsibility of those persons administering the individual contracts.
10. Drills will be held semi-annually to practice all of these procedures and will be treated with the same seriousness as an actual emergency.

10.7.1.1 On-Site Evacuation Routes

Evacuation routes are shown on
Figure 10.7. Employees are familiarized with
these routes and will take the most

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RDMS Document ID # 100829

Facility Name: MACDERMID INC

Facility ID#: CTD001164599

Phase Classification: R-1B

Purpose of Target Sheet:

☒ **Oversized (in Site File)** ☐ **Oversized (in Map Drawer)**

☐ **Page(s) Missing (Please Specify Below)**

☐ **Privileged** ☐ **Other (Provide
Purpose Below)**

Description of Oversized Material, if applicable:

FIGURE 10.7: EVACUATION ROUTES

☒ **Map** ☐ **Photograph** ☐ **Other (Specify Below)**

*** Please Contact the EPA New England RCRA Records Center to View This Document ***

accessible route. There is no one specific route for a given employee, thus there are no specific alternate routes. Emergency escape routes are posted in all hazardous waste areas.

10.7.2 Off-Site Notification/Evacuation Procedures

To notify the neighboring properties in an emergency, MacDermid, Inc. has joined the City of Waterbury's Community Alert Network. The Community Alert Network is a telecommunicator service which, when activated by the public safety officials, will warn residents in the affected area of the dangers.

10.8 Shut-Down of Operations

PRODUCTION BUILDING

Reclaim Department:	Shut off transfer operations, valves and pumps.
Bulk Etch Storage:	Turn off valves and pumps before leaving area.
Liquid Department:	Turn off all operations involving transfer pumping or filtration and mixtures. Turn off all heaters and mixing equipment.
Macuplex Department:	Same as Liquid Dept.
Pilot Department:	Same as Liquid Dept.
Dry Mix:	Shut down blending operation. LEAVE BLOWERS ON. Shut down pump transfer operations.

Shipping/Receiving:

Pull out trucks.

Office Areas:

Electrical Blackouts

Turn off all typewriters and copier machines.

Computer Equipment:

Turn off all computer terminals to avoid power surge.

Q.C./Lab:

Turn off all gas burners and electric heaters.

LEAVE HOOD VENTS ON.

NOTE:

ELECTRICITY AND SCRUBBERS, UNLESS TOLD OTHERWISE BY PLANT MANAGER, FIRE CHIEF OR OTHER FIRE DEPARTMENT OFFICIAL, KEEP SCRUBBERS AND ELECTRICITY ON.

GEAR STREET

Office Area:

Turn off typewriter and copier machine including during electrical blackouts.

Ink Lab:

Bunsen burners, solder pot, pressure chamber (pressure cooker).

Ink Production:

Shut down any transfers; turn off equipment.

Micro Production:

Shut off pumps, transfer pumps and valves on tanks.

Pilot Lab Area:

Shut off all transfer pumps. If reactor in use - turn it to cooling. DO NOT TURN REACTOR OFF.

NOTE:

ELECTRICITY AND SCRUBBERS, UNLESS TOLD OTHERWISE BY PLANT MANAGER, FIRE CHIEF OR OTHER FIRE DEPARTMENT OFFICIAL, KEEP SCRUBBERS AND ELECTRICITY ON.

GAS CONTROLS

In the event of a fire, the gas controls should be shut off, if possible, at the Production and Gear Street building by:

Yankee Gas Company

Locations: 1 Near East side of plant (near Dry Mix Area outside building).

 1 by Liquid Mix Area - Main Shut-off, inside.

ELECTRICAL FEED PANELS/CONTROL CIRCUITS

Locations: Production: Far East end of plant near dry Mix inside near exit door.

 Far West end of plant in bulk storage area (etch, etc.) - inside.

 Gear Street: Micro Production - North wall Surfactant Library

 Ink Production - In vault on East Aurora Avenue.

 The locations of feed panels/control circuits have been provided for general informational purposes only.

SPRINKLER VALVE CONTROL

Maintenance: The entire plant is protected by a sprinkler system which is monitored by ADT. In the event of a fire, the sprinkler system, would come on and send an alarm to ADT who would then notify the Fire Department.

When the fire is under control, assigned personnel are to shut off the sprinkler valve(s) to minimize damage. They are to remain at the valve(s) in the event the fire should erupt again.

Job Description: The automatic sprinkler system is the plant's and Gear Street's main line of fire defense. But unless the valves controlling the flow of water to the sprinklers are open when fire strikes and remain open until the fire is controlled, sprinklers are useless. Even though a valve is locked open, the valve control man goes to the valve to make sure it is open and remains to close as soon as possible to minimize water damage.

LOCATION(S) OF VALVES:

Production: Outside - 3 outside on Huntingdon Avenue side.

- 1 - near Truck Garage
- 1 - near NE end of plant
- 1 - near Liquid Mix Area

New Warehouse: 1 - near Tank Farm
1 - near Ammonia Tank

Gear Street: 1 - outside near front door
1 - inside near Micro Dept. Entrance
1 - along E. Aurora (Outside)

SPRINKLER CONTROL VALVE MAN

DUTIES

A. Location of valves

The valve control man must know the location of every valve to which he is assigned and know the plant area which each controls.

B. Manually try valve

He must know how to operate the valve, how to try it; and know where the valve wrench and padlocks are kept which should be at the valves.

C. When the alarm sounds

The valve control man goes to the valve control line sprinklers for the fire area. He will unlock it to "try" it to make sure it is open.

D. Stand guard by the valve during the fire, keep it open and prevent anyone from shutting the valve without authorization from the Fire Chief. The valve is to be shut only by command of the Fire Chief.

E. The control valve man stands by prepared to reopen the valve for as long as the Chief considers necessary.

F. After the incident

The control valve man works in conjunction with the pipe fitter to restore normal sprinkler protection after the incident.

COMPLICATING FACTORS

1. Distance to valves.
2. Keys to locks as needed (bolt cutter).
3. Knowledge of protection system (system documented).
4. All valves covered, and back-up available if valve man is temporarily absent.

10.9 Reporting of Emergency Incidents [40 CFR Sections 264.56(i) and 264.56(j)]

After an emergency, within seven (7) days, the Emergency Coordinator must report to the following agencies:

Connecticut Department of Environmental Protection
State Office Building
165 Capitol Avenue
Hartford, Connecticut 06106

Regional Administrator
U.S. Environmental Protection Agency
JFK Federal Building
Boston, Massachusetts 02203

The report must include:

- Name, address and telephone number of the owner/operator;
- Name, address and telephone number of the facility;
- Date, time and type of incident (e.g. fire, explosion);
- Name and quantity of material(s) involved;
- The extent of injuries, if any;
- An assessment of actual or potential hazards to human health or the environment, where applicable;
- Estimated quantity and disposition of recovered material that resulted from the incident;
- All differences between the emergency response activities actually taken and those prescribed in the contingency plan and the reasons for each such difference; and
- Proposed measures to prevent similar incidents in the future.

A copy of this report will be entered into the facility operating record.

Operations at MacDermid, Inc. shall not be resumed until MacDermid, Inc. notifies the Connecticut DEP that the facility is in compliance with 40 CFR Section 264.56(h).

10.10 Contingency Plan Review/Location [40 CFR Section 264.54]

Under the following conditions, the Contingency Plan should be reviewed and revised.

- (1) The Part A or Part B Permits are revised;
- (2) The plan fails in an emergency;

- (3) The list of emergency coordinators changes;
- (4) The list of emergency equipment changes;
- (5) There is any change in the operation or maintenance of the facility; or
- (6) There occurs any other circumstance which indicates the need for a change in the contingency plan.

Whenever this plan is amended, the amended plan shall be submitted to the Connecticut DEP for approval.

New employees will be familiarized with all emergency response procedures. It is also recommended that an annual review should be made to update the Contingency Plan. The Emergency Coordinator at MacDermid, Inc. will be responsible for updating the plan as necessary, and distributing the updated plan to plant personnel, local authorities and the Connecticut DEP.

10.10.1 Location

Copies of the Contingency Plan will be kept at five (5) locations at MacDermid, Inc.

- 1) Main Office
- 2) Traffic Office
- 3) Safety/Regulatory Compliance Office (Freight Street)
- 4) Plant General Manager's Office
- 5) Outside Emergency Response Shed

10.11 Arrangements with Local Authorities [40 CFR Sections 264.52(c) and 264.53]

State and Federal regulations require arrangements be agreed to by local police and fire departments, hospitals, contractors, and State and local emergency response teams.

In fulfillment of the requirements of this part, MacDermid, Inc. has completed the following:

Familiarize the police and fire departments with:

- The layout of the facility
- Properties and hazards associated with the wastes handled at the facility
- Places where facility personnel would normally be working
- Entrances to the facility
- Evacuation routes

Agreements have been made with the Connecticut DEP Emergency Response Unit to provide support, as needed, during an actual emergency. St. Mary's and Waterbury Hospitals are familiar with the properties of wastes handled at the facility and the types of injuries or illnesses which could result from fires, explosions, or releases at the facility.

Said departments, agencies, and emergency response personnel will be requested to provide those services described below in the event of an actual emergency.

Each of the above agencies has been contacted and sent copies of MacDermid, Inc.'s Contingency Plan. The following arrangements are in place:

The Waterbury Police Department will provide the following assistance during an emergency:

- Primary emergency authority
- Immediate response
- Emergency transport services
- Crowd control assistance
- Communications support
- Security to affected area
- Evacuation of surrounding areas, if required.

The Waterbury Fire Department will provide:

- Primary emergency authority
- Immediate response
- Primary fire fighting services
- Rescue and emergency transport services
- Communications support

Waterbury and St. Mary's Hospitals have received a copy of the Contingency Plan and will provide:

- Primary medical services
- Rescue services

10.12 Training/Experience of Emergency Coordinators

The training/experience of the Emergency Coordinator and his alternates is as follows:

- | | |
|---|--|
| Bill Schweiker
EMERGENCY COORDINATOR | <ul style="list-style-type: none"> • Bachelor of Science in Chemistry • 17 years on the job training • 24-hour OSHA 1910.120 Training Program |
|---|--|

Bob Ardizjauskas

- Bachelor of Science in Chemistry
- 10 years on the job training
- 24-hour OSHA 1910.120 Training Program

ATTACHMENT C

CLOSURE PLAN

Attachment C

Closure Plan

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ATTACHMENT C

13.0 CLOSURE PLAN

13.1 Introduction

In accordance with RCRA regulations contained in 40 CFR Parts 264.111 through 264.115 (General Closure Requirements), Subparts I and J (Specific Facility Requirements, Section 22a-449(c)-104 of RCRA, and Section 22a-454 of C.G.S., all owners and operators of hazardous waste facilities and commercial Connecticut regulated waste facilities must close their facilities in a manner that:

- o Minimizes or eliminates the need for further maintenance;
- o Controls, minimizes or eliminates, to the extent necessary to protect human health and the environment, post-closure escape of hazardous waste, hazardous constituents, leachate, contaminated run-off or hazardous waste decomposition products, to the ground water or surface water or the atmosphere; and
- o Complies with the closure requirements of 40 CFR Subpart G including, but not limited to, the requirements of 40 CFR Sections 264.197, 264.228, 264.258, 264.280, 264.310, 264.351, 264.381, and 264.404.

The Closure Plan must include, at a minimum:

- o A description of how and when the facility will be partially closed and ultimately closed in accordance with 40 CFR Part 264.111;
- o An estimate of the maximum inventory of waste in storage or contained in the treatment units at any given time;
- o A description of the steps needed to decontaminate facility equipment, structures, piping, etc., during closure;
- o A description of any additional activities required during partial or final closure activities to satisfy the closure performance standards such as ground water monitoring, leachate collection, etc.; and
- o A schedule for final closure.

The procedures outlined in the following sections are to be followed for closure of the existing hazardous and CT. 22a-454 waste storage facilities and recycling processes (see Figure 2.1) at MacDermid, Inc.'s 526 Huntingdon Avenue facility in Waterbury, Connecticut.

13.2 Closure Performance Standard

The closure performance standard set forth in this Plan requires that each storage area and recycling process be decontaminated to a level where all possible hazardous constituents have been removed to health and environmental based standards for all exposure pathways in order to achieve the goal of "clean" closure. The three exposure pathways of concern are inhalation, dermal contact, and ingestion.

It is, therefore, necessary to identify all Appendix VIII, 40 CFR 261 hazardous constituents which may be present. Due to the number of chemical compounds used to date at MacDermid, Inc., it was not possible to identify all Appendix VIII constituents¹ which have been used or managed on site. Therefore, sampling of the four greater-than-ninety day Storage areas for 40 CFR Part 264 Appendix IX constituents as described in Section 13.4.3.2 of application will be performed.. Listed under Table 13.1 are the hazardous constituents identified to date and their respective health and environmental based standards. Any constituents identified in the Appendix IX analysis will be added to those shown on Table 13.1.

An appendix IX sample will not be taken in the QC Area (Waste Staging area), since this area is used only for the temporary storage of recyclable used surface finishing chemicals which are subsequently transferred to the Main Container Storage Area. Instead, this area will rely on the Appendix IX sampling of the Main Container Storage Area for additional clean closure parameters.

¹ The 40 CFR Part 264 Appendix IX constituents have been identified by the EPA (July 9, 1987 Federal Register) to make up those compounds in Appendix VII to Part 261 which can be analyzed in ground water samples plus 17 chemicals routinely monitored in the SuperFund Program.

TABLE 13.1
CLOSURE PERFORMANCE STANDARD FOR
EACH HAZARDOUS CONSTITUENT*

MACDERMID, INC.
526 HUNTINGDON AVENUE
WATERBURY, CT.

Hazardous Constituent	MCL ^{1,2} (mg/l)	RSD ³ Water (mg/l)	RSD ³ Concrete (mg/kg)	RFD ⁴ Water (mg/l)	RSD- Inhalation (mg/m ³)	RFD ⁴ Concrete (mg/kg)	ACGIH TLV ⁸ (mg/m ³)
Barium	1.0 ⁵	-	-	2.0	NA	900	NA
Cadmium	0.01 ⁵	-	-	-	NA	-	NA
Chromium, Hexavalent	0.05 ⁵	-	-	0.2	NA	90	NA
Cyanide	0.2 ⁵	-	-	0.7	NA	300	NA
Copper	1.0 ⁶	-	-	-	NA	-	NA
Lead	0.05 ⁵	-	-	-	NA	-	NA
Nickel	-	-	-	0.7	NA	300	NA
Tin	-	-	-	-	NA	-	NA
Zinc	5.0 ⁶	-	-	-	NA	-	NA
Acetone	-	-	-	-	-	-	1780
Chlorobenzene	-	-	-	1.0	-	500	350
Ethyl Benzene	-	-	-	-	-	-	435
Ethyl Ether	-	-	-	-	-	-	1200
Isobutanol	-	-	-	10.0	-	5,000	150
Methylene Chloride	0.025 ⁷	0.0047	47	2.0	.00025	1,000	175
Methyl Ethyl Ketone	1.0 ⁷	-	-	2.0	-	900	590
Methyl Isobutyl Ketone	-	-	-	-	-	-	205
Tetrachloroethylene	0.02 ⁷	0.0069	69.0	0.4	.00014	200	335
Toluene	1.0 ⁷	-	-	10.0	-	5,000	375
1,1,1-Trichloroethane	0.2 ⁷	-	-	3.0	-	2,000	1900
1,1,2 Trichloro	-	-	-	-	-	-	7600
1,2,2 Trifluoroethane	-	-	-	-	-	-	-
Trichloroethylene	0.005 ⁷	0.0032	32	-	.00027	-	270
Xylene	-	-	-	-	-	-	435

* Subject in all cases to replacement by DEP which most recent values.

- 1 Maximum Contaminant Level
- 2 When MCL's are not available other standards such as Connecticut Volatile Organic Action Levels will be used if available.
- 3 Risk-Specific Doses
- 4 Verified Reference Doses
- 5 U.S. EPA Drinking Water Standard
- 6 CT Drinking Water Standard - may only be used if there is no RSD or RFD for water.
- 7 CT-Volatile Organic Action Level - may only be used if there is no RSD or RFD for water.
- 8 American Conference of Governmental Industrial Hygienists' Threshold Limit Value - may only be used if there is no inhalation RSD.

The chief exposure pathway of concern has been determined to be ingestion. The inhalation and dermal exposure pathways are not expected to pose a risk to the general public. To demonstrate clean closure, however, theoretical concentration of each constituent with respect to the air pathway will be calculated and compared to the applicable TLV or other health-based standard. To minimize the threat to closure personnel, closure personnel will be equipped with the appropriate personal protection equipment as described in Section 13.4.7.

The health-based levels for the ingestion pathways are as follows:

- Maximum Containment Levels (MCL's)
- Risk Specific Doses (RSD's)
- Verified References Doses (RFD's)

The known MCL's, RSD's and RFD's for the hazardous constituents listed under Table 13.1 will be referred to as the closure performance standards and will be used to determine when clean closure has been achieved at this site.

13.3 Closure Performance Determination

The following hierarchies will be used to determine when the closure satisfies the clean closure performance standards shown on Table 13.1. These hierarchies have been developed for the different exposure routes (i.e. ingestion of leachate, or concrete) and to take into consideration background levels.

For liquid matrices (i.e. concrete leachate and tank wipe samples), the analytical results for specific constituents will be compared

to the MCL's, RSD's, RFD's and background levels depending upon availability. In the event that the background level for a specific constituent is higher than the corresponding MCL's, RSD's and RFD's, the background level will be used as the clean standard. If the background level is less than the MCL, if one is available, the MCL will be used as the clean standard. If there is not an MCL and the background level is less than the RSD, if one is available, the RSD will be used as the clean standard.

If there is not an RSD and the background level is less than the RFD, if one is available, the RFD will be used as the clean standard. If there are no relevant health-based standards, the applicable minimum detection limits for the appropriate test method will be used. The exception to this order would be in a case that an RFD were lower than a corresponding RSD. In that case, the RFD would take precedence over the RSD. In summary, the order of closure standards for liquid matrices will be as follows:

- Background
- MCL's
- RSD's
- RFD's
- Other Relevant Health-Bases Standards (as approved by CT-DEP)
- Minimum Detection Limits

For solid matrices (i.e. concrete), the analytical results for specific constituents will be compared to the RSD's, RFD's, and background levels depending upon availability. In the event that the background level for a specific constituent is higher than the corresponding RSD's and RFD's, the background level will be used as the

clean standard. If the background level is less than the RSD, if one is available, the RSD will be use as the clean standard.

If there is not an RSD and the background level is less than the RFD, if one is available, the RFD will be used as the clean standard. If there are no relevant health-based standards, the applicable minimum detection limit for the appropriate test method will be used. The exception to this order would be in a case that an RFD were lower than a corresponding RSD. In that case, the RFD would take precedence over the RSD. In summary, the order for the closure standards for solid matrices will be as follows:

- Background
- RSD's
- RFD's
- Other Relevant Health-Based Standards (as approved by CT-DEP)
- Minimum Detection Limits

In the case of the tanks used for storage and recycling (metal and FRP), only wipe samples will be collected to determine if the clean closure has been achieved. To achieve clean closure, all contaminants of concern must be below minimum detection limits. If these standards cannot be achieved, the tanks will be disposed of off-site at a permitted hazardous waste facility.

In the case of the concrete floors located in the storage areas, the certification concrete samples must meet the closure performance standard for direct ingestion by mass analysis and soil leachability by TCLP for organics and metals. The concrete mass analysis results will be compared to the hierarchy for solid matrices, while the

concrete's leachability results will be compared to the hierarchy for liquid matrices.

For the inhalation pathway, the theoretical concentration of each volatile contaminant will be calculated as follows:

- (a) determine average concentration of volatile contaminant present in each storage area (using sampling results collected for the ingestion pathway);
- (b) determine volume of concrete in each storage area;
- (c) determine the volume air space surrounding each storage area;
- (d) calculate the mass of the remaining volatile contaminant from (a) and (b) above;
- (e) calculate the theoretical concentration of each volatile contaminant from (c) and (d) above; and
- (f) compare to the applicable TLV or other health-based standards. These standards are provided under Table 13.1.

In the event, it is determined that clean closure cannot be achieved at this site, "an unexpected event", a modified plan will be submitted to U.S. EPA and CT-DEP within thirty (30) days (see Section 13.4.11).

To achieve "clean closure", all constituents tested for within each storage area must not exceed the clean standard for all pathways.

13.4 Closure Plan

The facilities employed at MacDermid's 526 Huntingdon Avenue plant for the storage and recycling of hazardous/CT- 22 -454 wastes include the following:

- Main Container Storage Area;
- Flammable Material Storage Area;
- Combustible Storage Area;

- Metal Hydroxid- Sulfide Sludge Storage Area;
- Waste Storage Tanks; and
- Recycling Tanks

The procedures to be followed by MacDermid, Inc. to close these facilities in a manner which will minimize the need for further maintenance and protect human health and the environment are provided in the following sections.

13.4.1 Closure Plan for Container Storage Areas

EPA ID Number:	CTD 001164599
Owner/Operator:	MacDermid, Inc.
Plant Phone Number:	(203) 575-5700
Facility Address:	526 Huntingdon Avenue Waterbury, Connecticut

13.4.1.1 Facility Operation

MacDermid, Inc. employs four (4) separate areas for the storage of containers at its Huntingdon Avenue facility. The maximum storage capacity of these areas and their intended use are as follows:

<u>Storage Area</u>	<u>Maximum Capacity</u>	<u>Intended Use</u>
Main Container Storage Area	77,000 gallons (1,280 55-gallon drums 20 330-gallon totes)	Used finishing chemicals received from customers and MacDermid off-site facilities for recycling and miscellaneous liquids and semi-liquids generated on-site and received from 245 Freight Street which have been designated for off-site disposal.

Flammable Material Storage Area	880 gallons (16 55-gallon drums)	Flammable liquids generated on-site and received from 245 Freight Street designated for off-site disposal.
Combustible Storage Area	4290 gallons (54 55-gallon drums and 4 330-gallon totes)	Used finishing chemical generated on-site and received from customers/off-site MacDermid facilities for recycling.
Metal Hydroxide/Sulfide Sludge Storage Area	1 26-cubic yard roll-off	Dewatered metal hydroxide/sulfide sludge generated from the on-site industrial waste water treatment system.
QC Area (Waste Staging Area)	6,380 gallons (80 55-gallon drums and 6 330-gallon storage totes)	Used surface finishing chemicals received from customers for recycling, temporarily held for spot testing.

Within these areas, all containers, except the 330 gallon storage totes and 26 cubic yard roll-off are stored on wooden pallets to prevent contact with any spilled/leaked waste. To provide access for inspection, all container rows are separated by a minimum of 2' and a maximum of 6'9" wide aisles.

13.4.1.2 Waste Disposal

It has been assumed for the purpose of this plan, that all wastes will require off-site disposal and the storage areas are at their maximum storage capacity. All con-

tainerized waste will be disposed of off-site at a permitted hazardous waste facility.

13.4.1.3 Closure Procedures

The procedures for closing each container storage area will incorporate the following steps:

Step 1: Dispose of all left over waste stored on-site at a permitted hazardous waste facility.

Step 2: Remove any loose dirt or dust using a dry vacuum. All dirt/dust collected in this operation will be placed in a 55 gallon drum, and disposed of off-site at a permitted hazardous waste facility.

Step 3: Collect a concrete sample from the floor which exhibits the greatest contamination (staining, spalling, etc.) and submit for Appendix IX analysis. Sampling and analysis procedures are provided under Section 13.4.3. Any parameter determined under this analysis will be added to Table 13.1.

Note: As described in section 13.2, the QC Area (Waste Staging Area) will not be Appendix IX sampled. This area will rely on the Main Container Storage Area for additional Appendix IX parameters.

Step 4: Remove any hazardous constituents which may have contaminated the concrete floor using a high pressure steam cleaner. An alkaline industrial cleaner which is phosphate free will be used with the steam cleaner.

Step 5: Collect all cleaning water generated in Step 4 using a wet vacuum. All cleaning water will be collected in 55 gallon drums

or a vacuum truck and disposed of off-site at a permitted hazardous waste facility.

Step 6: Steam clean the floor after Step 5 using clean water only.

Step 7: Collect five concrete samples from each storage area using the sampling procedures described under Section 13.4.3.3. Four of the five sampling locations will be determined by dividing each storage area into 20 subsections and then using a random number generator (computer) to select each sampling point. The fifth sampling location will be located in the area of suspected highest contamination (e.g. stained, corroded concrete).

Step 8: Inspect the area for cracks, gaps or other surface damage which may have allowed migration of wastes to subgrade.

Step 9: For suspect areas determined under Step 8, a core drill will be used to determine if waste constituents have migrated to the subgrade. This will be accomplished by inspecting the concrete core for stains and extent of cracks and gaps.

Step 10: From each area evaluated under Step 9, a sample will be collected from the side wall of the core hole and if necessary from the subgrade for analysis of Table 13.1 parameters as amended by the Appendix IX analysis of Step 3 above. The sampling procedures are described under Section 13.4.3.

Step 11: Submit the samples collected under Steps 9 and 10 to a certified laboratory for analysis. Each sample will be analyzed for the parameters listed under Table 13.1 plus additional parameters detected under Step 3. The specific analytical procedures to be followed for the known hazardous constituents are listed under Table 13.4.

Step 12: Compare the analytical results under Step 11 to the closure performance standards listed under Table 13.1, or for parameters added as a result of the appendix IX analysis, as determined from the hierarchies in Section 13.3

Step 13: If closure performance standards cannot be achieved (an unexpected event), a modified Closure Plan will be submitted to the U.S. EPA and CT-DEP within thirty days (see Section 13.4.11).

Step 14: All contaminated personal equipment and spill control equipment will be collected in 55 gallon drums and disposed of off-site at a permitted facility.

Step 15: To store wastes generated from closure activities, temporary storage areas will be utilized. These areas will be located away from any floor drains, floor trenches, etc. and provided with containment berms constructed of absorbent material (sandbags, etc.).

All waste generated during the closure of the container storage areas will be manifested and shipped off-site by a licensed

waste hauler for treatment and/or disposal at a permitted hazardous waste facility. Since no testing is proposed for these waste streams (sweepings, residues, rinsewaters and discarded personal protective equipment) these wastes will be managed and handled as hazardous wastes. Rinse or cleaning water generated in the decontamination process is estimated to be 1% of the area's maximum storage capacity.

All closure work will be supervised and performed using qualified off-site personnel. Off-site personnel will be equipped with the personal equipment described under Section 13.4.7. Chemical neutralization and spill control pillows will be employed in the event of the spills resulting from the container storage area decontamination process. Strict supervision will include provisions for no open flames, hot surfaces or smoking to be present in and around the work areas.

13.4.2 Closure Plan for Waste Storage/Recycling Tanks and Storage Areas

EPA ID Number: CTD 001164599
Owner/Operator: MacDermid, Inc.
Plant Phone Number: (203) 575-5700
Facility Address: 526 Huntingdon Avenue
Waterbury, Connecticut

13.4.2.1 Facility Operation

MacDermid, Inc. employs four (4) above ground storage tanks for the storage of bulk recyclable wastes received from customers and off-site MacDermid facilities. All wastes stored in these areas are designated for recycling. The total storage capacity for these three 8,000 gallon tanks and one 5,000 gallon tank is 29,000 gallons.

These tanks are located on the west side of the Huntingdon Avenue plant.

Under MacDermid recycling operations, the following tanks are employed:

Solder Stripper Recycling Operation

- (1) 3,000 gallon FRP tanks
- (2) 1,000 gallon Electrolysis Cells
- (1) 1,500 gallon Copper Treatment Tank

Copper Etchant Recycling Operation

- (3) 8,000 gallon FRP tanks (bulk waste storage tanks)*
- (1) 5,000 gallon FRP tank (bulk storage tank)*

- (1) 5,000 gallon Stainless Steel Reactor
- (1) 3,800 gallon Stainless Steel Reactor
- (6) 3,500 gallon FRP tanks
- (2) 4,000 gallon FRP tanks
- (3) 6,300 gallon Storage tanks

NMP Recycling Operation

- (1) 500 gallon Stainless Steel tank
- (1) 20 gallon distilled water vacuum receiver
- (1) 55 gallon distilled NMP vacuum receiver

*Note: These tanks are already included under the total tank storage capacity of 29,000 gallons listed under page 13-14.

13.4.2.2 Waste Disposal

For the purpose of this plan, it has been assumed that all bulk waste will require off-site disposal and the storage tanks are at their maximum storage capacities. All bulk waste will be disposed of off-site at a permitted hazardous waste facility.

13.4.2.3 Closure Procedures

The procedures for closing the bulk waste storage and recycling tanks and the storage areas are as follows:

Step 1: Dispose of all left over waste stored on-site at a permitted hazardous waste facility.

- Step 2: Remove any loose dirt or dust using a dry vacuum. All dirt/dust collected in this operation will be placed in a 55 gallon drum, and disposed of off-site at a permitted hazardous waste facility.
- Step 3: Collect a concrete sample from the floor area which exhibits the greatest contamination (staining, spalling, etc.) and submit for Appendix IX analysis. Sampling and analysis procedures are provided under Section 13.4.3. Any parameter determined under this analysis will be added to Table 13.1.
- Step 4: Using a high pressure steam cleaner with an alkaline industrial cleaner (phosphate free) wash the inside of the tanks, the outside of the tanks, piping, structure supports and the floor of the storage area.
- Step 5: Steam clean the tanks (inside and outside) piping, structural supports and floor after Step 5 using clean water only.
- Step 6: Collect all cleaning water generated in Steps 4 and 5 (55 gallon drums or vacuum truck) and ship to a permitted hazardous waste facility for final treatment/disposal.
- Step 7: Collect 1 wipe sample from the inside and outside of each storage and recycling tank using the sampling procedure described under Section 13.4.3. The sampling areas will be located in the areas exhibiting the greatest contamination.

Step 8: Submit the wipe samples to a certified laboratory for analysis. Each sample will be sampled for the parameters listed under Table 13.1 plus any additional parameters detected under Step 3. The specific analytical procedures to be followed are listed under Table 13.4.

Step 9: Compare the analytical results under Step 8 to closure performance standards listed under Table 13.1.

Step 10: Based on the analytical results the tank, piping, structural supports will either be disposed of off-site at a permitted hazardous waste facility (cannot meet closure performance standards) or disposed of at a used equipment supplier or scrap metal dealer (meets closure performance standards). In all cases, tanks will be removed to allow for assessment of the underlying floor.

Step 11: The floor underneath the tanks and surrounding the tanks will be inspected for cracks, gaps or other surface damage which may have allowed migration of wastes to subgrade.

Step 12: For suspect areas determined under Step 11, a core drill will be used to determine if waste constituents have migrated to the subgrade. This will be accomplished by inspecting the concrete core for stains and extent of cracks and gaps.

Step 13:

From each area evaluated under Step 12, a sample will be collected from the side wall of the core hole and, if necessary, from the subgrade, for analysis of Table 13.1 parameters as amended by the Appendix IX analysis in Step 3. The sampling procedures are described under Section 13.4.4.

Step 14:

From each storage/recycling area, collect five concrete samples from the storage areas' floor using the sampling procedures described under Section 13.4.3.3. Four of the five sampling locations will be determined by dividing the storage area into 20 subsections and then using a random number generator (computer) to select each sampling point. The fifth sampling location will be located in the area of suspected highest contamination (e.g. stained, corroded concrete).

Step 15:

Submit the samples collected under Steps 13 and 14 to a certified laboratory for analysis. Each sample will be analyzed for the parameters listed under Table 13.1 plus any additional parameters detected under Step 3. The specific analytical procedures to be followed for the known hazardous constituents are listed under Table 13.4.

Step 16:

Compare the analytical results under Step 15 to the closure performance standards listed under Table 13.1, or for parameters added as a result of the Appendix IX analysis, as determined from the hierarchies in Section 13.3

Step 17: If closure performance standards cannot be achieved (an unexpected event), a modified closure plan will be submitted to the U.S. EPA and CT-DEP within thirty days (see Section 13.4.11).

Step 18: All contaminated personal equipment and spill control equipment will be collected in 55 gallon drums and disposed of off-site at a permitted facility.

Step 19: To store wastes generated from closure activities, temporary storage areas will be utilized. These areas will be located away from any floor drains, floor trenches, etc. and provided with containment berms constructed of absorbent materials (sandbags, etc.).

All waste generated during the closure of the bulk waste storage tanks will be manifested and shipped off-site by a licensed waste hauler for treatment and/or disposal at a permitted hazardous waste facility. Since no testing is proposed for these waste streams (sweepings, residues, rinsewaters, and discarded personal protective equipment), these wastes will be managed and handled as hazardous wastes. Rinse or cleaning water generated in the decontamination process is estimated at

10% of the tanks maximum storage capacity.

All closure work will be supervised and performed using qualified off-site personnel. Off-site personnel will be equipped with the personal protective equipment described under Section 13.4.7. Chemical neutralization and spill control pillows will be employed in the event of the spills resulting from the decontamination process. Strict supervision will include provisions for no open flames, hot surfaces or smoking to be present in and around the work areas.

13.4.3 Methods for Sampling and Analysis

The procedures described in this section will be used to sample and analyze the various media for the following events:

- Ambient air monitoring;
- Appendix IX sampling;
- Concrete certification sampling;
- Cracks or gaps in concrete floor sampling;
- Concrete background sampling; and
- Wipe sampling.

13.4.3.1 Ambient Air Monitoring

The storage and recycling areas are expected to pose a minimal inhalation risk only during closure activities. As such, air monitoring will be conducted to protect the health of closure personnel and off-site personnel.

Air monitoring for gross organic vapors will be conducted utilizing an HNU Organic Vapor Analyzer or an equivalent. This monitoring will be conducted to determine background levels, property boundary levels, and work area levels. This instrument yields direct measurements, therefore, no laboratory analyses are necessary. These readings will be taken continuously and recorded hourly relative to background levels.

If at any time during the closure activities, levels on the photoionization unit are detected greater than 5 ppm above background levels, the area will be temporarily evacuated and the class of personal

protection used during the closure activities will be upgraded.

The metallic constituents of concern should not pose an inhalation based threat as the materials which will be handled during the closure will be wetted to control or eliminate the risk of inhaling metal bearing dusts.

13.4.3.2 Appendix IX Sampling

To determine the hazardous constituents which may be present within the storage and the recycling areas, a concrete sample of the floor will be collected and analyzed for 40 CFR 264 Appendix IX constituents. The Appendix IX samples will be collected in the following manner:

- Step 1: Inspect the floor of storage or recycling area to determine the area of greatest contamination (staining, corrosion, etc.).
- Step 2: Collect a concrete sample of at least 200 grams using a hand chisel.
- Step 3: Decontaminate sampling equipment after use as follows:
- wash with a suitable laboratory soap (alconox);
 - rinse with tap water;

- rinse with 1:4 solution of nitric acid/distilled water;
- rinse with distilled water;
- rinse with hexane; and
- air dry.

Step 4: Store concrete samples in glass jars with teflon seals and place on ice.

Step 5: Submit samples to a certified laboratory for analysis of Appendix IX constituents. All samples will be accompanied with a chain of custody (see Appendix A).

The parameters to be analyzed, recommended analytical procedures and corresponding detection limits to be followed by the certified laboratory are included in Appendix B. The most appropriate analytical method for a particular constituent will be chosen when a choice is given in Appendix B.

13.4.3.3 Certification Sampling of Concrete Floors

The concrete floor (base) within each storage and recycling area will be sampled to determine if the closure performance standards have been met. Each area will be sampled in the following manner.

Step 1: Divide the base of each area into 20 equal sections.

Step 2: Using a random number generator select four (4) sampling sites for each area. Select 1 additional sample from the area exhibiting the greatest contamination.

Step 3: Collect at least a 200 gram concrete sample from the center of each sampling section by one of the following methods: powered jack hammer or hand chisel.

Step 4: To prevent cross contamination between sampling points, sampling equipment will be decontaminated after each sample by the following:

- wash with a suitable laboratory soap (alconox);
- rinse with tap water;
- rinse with 1:4 solution of nitric acid/distilled water;
- rinse with distilled water;
- rinse with hexane; and
- air dry.

Step 5: Store concrete samples in glass jars with teflon seals and place on ice.

Step 6: Submit samples to a certified laboratory for analysis. All samples will be accompanied with a chain of custody (see Appendix A).

The certification samples for a particular area will be analyzed for all parameters shown on Table 13.1 and any additional constituents identified by that area's Appen-

dix IX sampling event. The samples will be pretreated as discussed in Section 13.4.5.

13.4.3.4 Sampling of Cracks and Gaps in Concrete Floor

To determine if the waste constituents have migrated to the subgrade level, the floor within each storage and recycling area will be inspected for cracks, gaps or other surface damage. Each suspect area (cracks or gaps with width 1/16" or greater) will be sampled in the following manner.

Step 1: Using a 3 inch or larger diameter core drill, core down a minimum of six inches or to the next subgrade level.

Step 2: Inspect the concrete core to determine if the crack or gap extends to the subgrade level.

Step 3: Collect at least a 200 gram sample from the subgrade level if the cracks or gaps extend to the sublevel.

Step 4: To prevent cross contamination between sampling points, sampling equipment will be decontaminated after each sample by the following:

- wash with a suitable laboratory soap (alconox);
- rinse with tap water;
- rinse with 1:4 solution of nitric acid/distilled water;
- rinse with distilled water;

- o rinse with hexane; and
- o air dry.

Step 5: Store concrete samples in glass jars with teflon seals and place on ice.

Step 6: Submit samples to a certified laboratory for analysis. All samples will be accompanied with a chain of custody (see Appendix A).

The samples from a particular area will be analyzed for all parameters shown on Table 13.1 and any additional constituents identified by that area's Appendix IX sampling event. The samples will be pretreated as discussed in Section 13.4.5.

If samples taken in step 3 indicate subgrade contamination above the health based standards in Table 13.1 as amended by this Appendix IX analysis, McDermid, Inc. must notify DEP in writing and submit a modified closure plan within 30 days, per Section 13.4.11 of this Closure Plan.

13.4.3.5 Concrete Background Samples

To determine if any metal hazardous constituents are inherent characteristics of the concrete within the storage and recycling areas, background concrete samples, if available, will be collected and analyzed. Background concrete samples must be collected from an area where no manufacturing processes, waste of product storage, etc. have occurred which might have caused contamination of the sample.

If such an area cannot be located in the same construction phase of the building, background samples will not be utilized.

Background concrete samples, if available, will be sampled in the following manner:

Step 1: Inspect the surrounding area of each storage and recycling area to locate an area where no manufacturing processes waste or product storage has occurred

Step 2: Using a core drill, core down a minimum of six inches or to the next subgrade level. Collect three samples from each background sampling location.

Step 3: Remove approximately one (1) inch of concrete from the bottom of each core using a hand chisel.

Step 4: To prevent cross contamination between sampling points, sampling equipment will be decontaminated after each sample by the following:

- wash with a suitable laboratory soap (alconox);
- rinse with tap water;
- rinse with 1:4 solution of nitric acid/distilled water;
- rinse with distilled water;
- rinse with hexane; and
- air dry.

- Step 5: Collect at least a 200 gram sample from the bottom of each core sample.
- Step 6: Store concrete samples in glass jars with teflon seals and place on ice.
- Step 7: Submit samples to a certified laboratory for analysis. All samples will be accomplished with a chain of custody (see Appendix A).
- Step 8: Use the method described below to statistically verify background levels.

To ensure the virgin concrete and not the subgrade and/or contaminated concrete is being analyzed, the procedure described above has been developed. Concrete background samples will also be analyzed for all parameters listed under Table 13.1 and additional Appendix IX parameters (identified in that area) to verify the concrete has not been contaminated from past operations. The presence of hazardous constituents other than metallic would indicate contamination from past operations.

A statistical analysis will also be performed on the background samples to determine if the metal constituents are

representative of on-site background levels. The statistical approach discussed in Chapter 9 of the EPA Document SW-846 Test Methods for Evaluating Solid Waste for Simple Random Sampling will be followed.

13.4.3.6 Wipe Samples

To determine if the closure performance standards have been met for the storage/recycling tanks, the tanks will be sampled in the following manner:

Step 1: Mark off one (1) area of 0.50m^2 on the inside and the outside surface of the storage and recycling tanks (0.25m^2 is for metals sampling).

Step 2: For organic analysis, hold cotton gauze in a metal clamp (or equivalent and saturate the gauze with hexane. For metal analyses, use dilute nitric acid (1:4 nitric acid/deionized water) in place of hexane.

Step 3: While still holding the hexane saturated gauze in the clamp, wipe half (0.25m^2) of the sampling area back and forth repeatedly in vertical direction, applying moderate pressure. Turn the gauze over and wipe back and forth in the horizontal direction.

Step 4: Place the gauze in a glass jar with a teflon seal and store in a cooler on ice.

Step 5: Repeat steps 3 and 4 with the dilute nitric acid saturated gauze.

Step 6: Submit samples to a certified laboratory with a chain of custody (see Appendix A).

The wipe samples for a particular tank will be analyzed for all parameters shown on Table 13.1 and any additional constituents identified by that area's Appendix IX sampling event. The samples will be pre-treated as discussed in Section 13.4.5).

13.4.4 Sample Containers and Preservation

The various samples (concrete and wipe) collected under Section 13.4.3 will be placed into the appropriate container and preserved as shown on Table 13.2.

13.4.5 Analytical Procedures

The various samples will be collected and stored as described above and in previous sections. Upon delivery to the certified laboratory, the samples will be analyzed for the appropriate parameters as discussed in the preceding sections. Due to the sample matrices (solids such as concrete), and pathways of concern, some samples must be pretreated prior to analysis by

the appropriate method for a given parameter. The recommended pretreatment methods for the various samples are shown on Table 13.3. The recommended analytical methods for the identified hazardous constituents are included as Table 13.4.

TABLE 13.2

SAMPLE COLLECTION/PRESERVATION REQUIREMENTS

MACDERMID, INC.
526 HUNTINGDON AVENUE
WATERBURY, CONNECTICUT

<u>Sample Type</u> <u>(sample size)</u>	<u>Parameter</u>	<u>Container</u>	<u>Preservation</u>	<u>Holding Time</u>
Concrete (200 g)	Metals	Glass	Cool to 4°C	6 months
Concrete (200 g)	Organics	Glass ¹	Cool to 4°C	7 days ²
Wipe (N/A)	Metals	Glass	Cool to 4°C	6 months
Wipe (N/A)	Organics	Glass ¹	Cool to 4°C	7 days ²

¹ With teflon seal.

² Until extraction, 40 days after extraction.

TABLE 13.3

RECOMMENDED PRETREATMENT METHODS¹

MACDERMID, INC.
526 HUNTINGDON AVENUE
WATERBURY, CONNECTICUT

Recommended Pretreatment Methods

Sample	Parameter	Mass Analysis	Leachability	Description
Concrete	Metals	3050	TCLP ²	Certification Sampling
Concrete	Volatile Organics	5030	TCLP ²	Certification Sampling
Concrete	Metals	3050	TCLP ²	Background Sampling
Concrete	Volatile Organics	5030	TCLP ²	Background Sampling
Concrete	Metals	3050	TCLP ²	Appendix IX Sampling
Concrete	Volatile Organics	5030	TCLP ²	Appendix IX Sampling
Wipe	Metals	3050	N/A	Certification Sampling
Wipe	Volatile Organics	5030	N/A	Certification Sampling

¹ Test Methods for the Evaluation of Solid Waste Physical/Chemical Methods, EPA Sw-846, 3rd Edition, November, 1986, or most recent edition.

² Toxicity Characteristic Leaching Procedure, 40 CFR Part 268, Appendix I, as most recently amended.

TABLE 13.4
RECOMMENDED ANALYTICAL METHODS¹

MACDERMID, INC.
526 HUNTINGDON AVENUE
WATERBURY, CONNECTICUT

<u>Parameter</u>	<u>EPA Method²</u>
Barium	7080
Cadmium	7130/7131
Chromium	7190/7191
Copper	7210
Cyanide	9010
Lead	7420/7421
Nickel	7520
Tin	7870
Zinc	7950
Acetone	8240
Chlorobenzene	8010
Ethyl. Benzene	8020
Ethyl Ether	8240
Isobutanol	8015
Methylene Chloride	8010
Methyl Ethyl Ketone	8015
Methyl Isobutyl Ketone	8015
Tetrachloroethylene	8010
Toluene	8020
1,1,1,-Trichloroethane	8010
1,1,2-Trichloro-1,2,2 Trifluoroethane	8010
Trichloroethylene	8010
Xylene	8020

- 1 Test Methods for the Evaluation of Solid Waste Physical/Chemical Methods, EPA SW-846, 3rd Edition, November, 1986. Any additional parameters analyzed for in response to Section 13.4.1.3 of this plan shall be per SW-846, or other method approved by DEP.
- 2 When analyzing a sample, the most appropriate analytical method for a particular constituent will be chosen when a choice is listed.

13.4.6 Field Quality Assurance/Quality Control Program

To monitor the field sampling activities certain QA/QC activities must be performed to ensure the accuracy and validity of samples collected and the corresponding results. During closure activities, equipment, field and trip blanks will be utilized. These blanks will be utilized for the background concrete, certification concrete and certification wipe. These blanks will be taken with a minimum frequency of one of each type per twenty samples per day. Equipment blanks will consist of deionized water that is transported to the site, opened in the field, poured through or over the sampling device, collected in a sample container and sent to the laboratory. Field blanks will consist of deionized water that is transported to the site, transferred from one container to another, and sent to the laboratory. Trip blanks will consist of deionized water that is transported to the site and sent to the laboratory without being opened.

13.4.7 Personnel Protection

All personnel involved in the inspection, sampling, decontamination, and removal activities will have been trained with respect to the applicable provisions of the Occupational Health and Safety Act. To ensure the safety of the site workers, appropriate personal protec-

tion equipment will be utilized as required for the site activity in progress.

Recommended personal protection levels for the different site activities are shown on Table 13.5. The appropriate personal protective equipment for the different levels of protection is shown on Table 13.6.

To determine when conditions exist which would cause the contingent level of protection to be utilized, ambient air monitoring of the work area will be conducted as described in Section 13.4.1.1.

13.4.8 Equipment Decontamination

To carry out the closure activities outlined in this report, the following equipment will be utilized:

- Dry/wet vacuums
- Vacuum truck with necessary hoses (if necessary)
- Roll-off
- Shovels
- Steam jenny
- 55-gallon drums
- Squeegees
- Concrete core drill
- hammer and chisel
- Air purification respirators
- Jackhammer

Prior to placing this equipment back into service, the procedure outlined below will be followed to remove any residue.

TABLE 13.5
RECOMMENDED LEVELS
OF
PERSONAL PROTECTION

MACDERMID, INC.
526 HUNTINGDON AVENUE
WATERBURY, CONNECTICUT

<u>Activity</u>	<u>Personnel</u>	<u>Recommended Level of Protection</u>
Removal of Waste Material	All personnel	Level C
Decontamination of the Floors and Tanks	All personnel	Level C
Sampling	All personnel	Level D (Level C)

Criteria for upgrading to the contingent level of personal protection are as follows:

Level D - Level C

Ambient air reading in the breathing
zone above background readings.

TABLE 13.6
PERSONAL PROTECTIVE EQUIPMENT

MACDERMID, INC.
526 HUNTINGDON AVENUE
WATERBURY, CONNECTICUT

<u>Level</u>	<u>Equipment</u>
D	Work Clothes Work Boots Gloves Safety Glasses Chemical-Resistant Boots* Hard Hat*
C	Full-Face Air Purifying Respirator Chemical-Resistant Clothing Chemical-Resistant Gloves Chemical-Resistant Boots

* Optional

Step 1: All decontamination procedures will be performed in an area located away from any floor drains, floor trenches, etc. To prevent any runoff from this area, a 4-6 mil piece of plastic will be elevated 6-8 inches using sandbags or bags of absorbent material stationed around the decontamination area.

Step 2: Equipment will be first cleaned using brushing and brooms to remove any visible residue.

Step 3: All residue (liquid) collected from this operation will be placed in 55-gallon drums for off-site disposal at a permitted hazardous waste facility.

Step 4: To remove any residue remaining on the equipment, the following washing procedure will be followed:

Small Equipment

- A. Small equipment such as shovels will be washed and rinsed over an open 55-gallon drum. A laboratory soap, containing the active ingredient trisodium phosphate will be used in the washing operation.
- B. The wash and rinse waters will be collected in the 55-gallon drum for off-site disposal at a permitted hazardous waste facility.
- C. Any spillage from this operation will be absorbed with speedi-dry or sand and shoveled in a 55-gallon drum for off-site disposal at a permitted hazardous waste facility.

Large Equipment

- A. Large equipment such as the backhoe, if required, will be first stationed on a 4-6 mil piece of plastic. The four sides of this plastic will then be elevated 6-8 inches using bags of sand/absorbent material to form a dike to collect wash and rinse waters.
- B. Using brushes and brooms, the large equipment will be washed using a laboratory soap containing the active ingredient trisodium phosphate.
- C. Using pressurized water, all soap will be removed.
- D. The wash and rinses collected in the dike will then be pumped into 55-gallon drums for off-site disposal at a permitted hazardous waste facility.
- E. Following removal of wash and rinse water, the piece of plastic will be placed in a 55-gallon drum for off-site disposal at a permitted hazardous waste facility.

Step 5: All disposable safety equipment such as coveralls, gloves, etc., will be collected in 55-gallon drums and disposed of off-site at a permitted hazardous waste facility.

Sampling and analysis of equipment after decontamination is not considered necessary. Rather, a visual examination verifying removal of all soil and stains should be sufficient to ensure that all contaminants are removed.

All decontamination work will be supervised and performed using qualified personnel. Qualified personnel will be required to be trained regarding the hazards of the substances which they may be exposed to and in the proper use of personal protective equipment prior to the start of decontaminating activities.

13.4.9 Schedule for Closure

The expected year for closing MacDermid, Inc.'s facility is projected to be 2050. Tables 13.7 and 13.8 detail the closure schedules for the container storage areas and the storage/recycling tanks.

13.4.10 Extension of Closure Time

If, after the approval of the closure plan, it is determined the closure time period is to exceed 180 days, MacDermid, Inc. will submit a petition for a closure time extension which justifies that a longer period of closure time is necessary. This petition will be submitted at least 30 days prior to the expiration of the 180 day closure period.

TABLE 13.7

CLOSURE SCHEDULE FOR CONTAINER STORAGE AREAS

MACDERMID, INC.
526 HUNTINGDON AVENUE
WATERBURY, CONNECTICUT

<u>Closure Activity</u>	<u>Completion Date</u>
1. Notify the EPA and CT-DEP of expected closure	Day 1
2. Final date for accepting wastes	Day 180
3. Removal of leftover wastes	Day 210
4. Conducted Appendix IX Sampling as discussed in Section 13.4.3.2	Day 240*
5. Decontaminate the concrete floors as discussed in Section 13.4.1.3	Day 300
6. Inspect concrete floors for cracks and gaps	Day 300*
7. Sample the concrete floor and suspect areas as discussed in Sections 13.4.3.3, 13.4.3.4, and 13.4.3.5	Day 310*
8. Review analytical results to determine if clean closure has been achieved. If cannot be achieved submit a modified closure plan to US EPA and CT-DEP (See Section 13.4.11)	Day 330*
9. Disposal of rinse water, contaminated clean-up material and contaminated personal protective equipment	Day 330
10. Certification of closure by a Professional Engineer	Day 360*

*NOTE: Closure activity will be supervised by the certifying organization.

TABLE 13.8

CLOSURE SCHEDULE FOR WASTE
STORAGE/RECYCLING TANKS AND STORAGE AREAS

MACDERMID, INC.
526 HUNTINGDON AVENUE
WATERBURY, CONNECTICUT

<u>Closure Activity</u>	<u>Completion Date</u>
1. Notify the EPA and CT-DEP of expected closure	Day 1
2. Final date for accepting wastes	Day 180
3. Removal of leftover wastes	Day 210
4. Conduct Appendix IX sampling as discussed in Section 13.4.3.2	Day 220*
5. Decontaminate the inside and outside of the tanks, piping and structural supports as discussed in Section 13.4.2.3	Day 240*
6. Collect wipe samples as discussed in Section 13.4.3.6	Day 250*
7. Review analytical results to determine if closure performance standards can be achieved	Day 280*
8. Based on results, remove tanks and dispose of off-site at a permitted hazardous waste facility or used equipment supplier/scrap metal dealer	Day 280*
9. Inspect concrete floors for cracks and gaps	Day 300*
10. Sample the concrete floor and suspect areas as discussed in Sections 13.4.3.3, 13.4.3.4 and 13.4.3.5	Day 300*
11. Review analytical results to determine if clean closure has been achieved. If cannot be achieved, submit a modified closure plan to US EPA and CT-DEP (see Section 13.4.11)	Day 330*
12. Disposal of rinse water, contaminated clean-up material and contaminated personal protective equipment	Day 330
13. Certification of closure by a Professional Engineer	Day 360*

*NOTE: Closure activity will be supervised by the certifying organization.

13.4.11 Amendment of Closure Plan

In accordance with Section 264.112 MacDermid will amend the closure plan prior to closure whenever: (1) changes in operating plans or facility design affects the closure plan; or (2) whenever there is a change in the expected year of closure of the facility. These amendments will be made at least 60 days prior to the proposed change in facility design or operation, or no later than 60 days after an unexpected event has occurred which has affected the closure plan.

Following approval of the closure plan and implementation of the closure activities, MacDermid, Inc. will submit a modified plan within thirty (30) days after an unexpected event. Such unexpected event shall include the inability to close the regulated units "clean". If extensive contamination exists and closure cannot be completed according to the approved plan, MacDermid, Inc. will submit a modified plan to close the storage/recycling area with the appropriate post-closure. If the amendment to the plan is defined as a major modification according to 40 CFR 270.41 and 270.42, the modification to the plan will have to be approved according to the procedures in 40 CFR 264.112.

13.4.12 Closure Cost Estimate

In accordance with Section 264.142 and 264.197, the estimated costs to complete closure of the storage/recycling area is provided in Tables 13.9 and 13.10. All costs are based on 1990 dollars and assume a third party to perform the closure activities. These costs are based upon the following:

1. Operator @ \$40/hour
2. Supervisor @ \$50/hour
3. Disposal of wastes at the following rates
 - Contaminated clean-up and personal protective equipment \$250/drum
 - Decontamination rinse water \$150/drum
\$.50/gal.(bulk)
4. Waste transportation @ \$300/trip
5. Equipment
 - Basic safety equipment (per person) \$ 75/day
 - Tools \$ 25/day
 - Air Monitoring Equipment \$100/day
 - Pressure Washer \$150/day
6. Professional Engineer @ \$95/hour
7. Laboratory Analysis
 - Wipe sample \$ 250
 - Concrete sample \$ 500
 - Appendix IX sample \$3,000
8. Waste Materials
 - 55 gallon drums \$200/drum
 - Bulk Waste \$1/gallon
 - Metal Hydroxide/Sulfide Sludge \$250/cu.yd.
 - Storage Tote (330 gallons) \$750/tote
 - Tanks \$350/ton

TABLE 13.9
CLOSURE COSTS - CONTAINER STORAGE AREAS

MACDERMID, INC.
526 HUNTINGDON AVENUE
WATERBURY, CONNECTICUT

A.	Disposal of drummed wastes and roll-off	
	• 1,280 drums x \$200/drum (main container storage area)	\$256,000
	• 20 totes x \$750/tote (main container storage area)	15,000
	• 16 drums x \$200/drum (flammable materials storage area)	3,200
	• 54 drums x \$200/drum (combustible storage area)	10,800
	• 5 totes x \$750/tote (combustible storage area)	3,750
	• 80 drums x \$200/drum (quality control area)	16,000
	• 6 totes x \$750/tote (quality control area)	4,500
	• 1 roll-off x 26 cubic yards/roll-off x \$250/cubic yard	6,500
B.	Transportation of drummed wastes and roll-off	
	• 1,461 drums/totes x trip/80 containers x \$300/trip	5,700
	• 1 roll-off x trip/roll-off x \$1,500/trip	1,500
C.	Labor to handle drummed wastes and roll-off	
	• 1,461 drums ÷ 80 drums/hr. x \$40/hr.	731
	• 1 roll-off x 1 hr./roll-off x \$40/hr.	40
	• 7 hours supervision x \$50/hr.	350
D.	Decontamination of Storage Areas	
	• 2,000 gallons of rinse water @ \$.50/gal.	1,000
	• Transportation	300
	• Operators (2) time @ 80 hrs./each x \$40/hr.	6,400
	• Supervisor time @ 16 hrs. x \$50/hr.	800
	• Pressure washer rental @ 5 days x \$150/day	750
	• Safety equipment & tools @ \$200/day x 15 days x 2 operators	6,000
	• Appendix IX Analysis @ 5 samples x \$3,000/sample	15,000
	• Laboratory Analysis of concrete @ 31 samples (including 6 trip/field/blank samples) x \$500/sample	15,500
E.	Disposal of Personal Protective Equipment	
	• Disposal of 1 drum x \$750/drum	750
	• Transportation	300
F.	Professional Engineer Certification of Closure	
	• 8 hours x \$95/hr.	760
	TOTAL	\$371,631
	<u>SAY</u>	<u>\$372,000</u>

TABLE 13.10

CLOSURE COSTS - WASTE STORAGE/RECYCLING TANKS
AND STORAGE AREASMACDERMID, INC.
526 HUNTINGDON AVENUE
WATERBURY, CONNECTICUT

A.	Disposal of bulk waste	
	• 29,000 gallons x \$1.00/gallon (waste storage tanks)	\$ 92,775
	• 63,775 gallons x \$1.00/gallon (recycling tanks)	
B.	Transportation	
	• 92,775 gallons x trip/5,000 gallons x \$300/trip	5,700
C.	Labor to handle bulk waste	
	• 4 hours operators time x \$40/hour	160
	• 2 hours supervisors time x \$50/hour	100
D.	Decontamination of Storage Area & Tanks	
	• 9,275 gallons of rinse water @ \$0.50/gallon	4,638
	• Transportation	600
	• Operators (2) time @ 20 hours/each x \$40/hour	1,600
	• Supervisor time @ 4 hours x \$50/hour	200
	• Pressure washer rental @ 2 days x \$150/day	300
	• Safety equipment & tools @ \$200/day x 2 operators x 2 days	800
	• Laboratory analysis	
	4 Appendix IX samples @ \$3,000/sample	12,000
	30 concrete samples (including 6 trip/ field/blank samples) x \$500/sample	15,000
	54 wipe samples (including 6 trip/field/ blank samples) x \$250/sample	13,500
E.	Disposal of personal protective equipment	
	• Disposal of 1 drum x \$750/drum	750
	• Transportation	300
F.	Professional Engineer - Certification of Closure	
	• 2 hours x \$95/hour	<u>190</u>
	TOTAL	\$148,613
	<u>SAY</u>	<u>\$149,000</u>

13.4.13 Certification of Closure

Certification at the completion of closure by a Licensed Professional Engineer is required. A member of the certifying organization will be present during all major closure activities to assure that the approved closure plan is executed (see Tables 13.7 and 13.8). The following certification will be submitted to the EPA Region I Administrator and the Connecticut Department of Environmental Protection within 60 days of completion of closure activities.

"I, _____, for _____
or _____, a hazardous waste
TSDF, and I, _____, P.E., employed
by _____ certify by means of
signatures, that the facility named above has been
closed in accordance with the method specified by the
Closure Plan and attached hereto.

Closure was completed on _____
after receiving the final volume of material on
_____.

Company Name Engineer P.E.

Date Date

Along with the closure certification, a list of departures from the plan, a photographic record, sampling results, manifests and any other pertinent documents verifying closure will be provided to the CT-DEP and EPA.

13.5 Partial Closure

Partial closure is not expected nor projected for this facility. In the event that the facility determines that it is necessary to close a part of this facility, the closure plan will be amended to indicate the closure schedule for partial closure. In such circumstances, the amended closure plan will be submitted to the EPA Regional Administrator 180 days before partial closure is expected to begin.

Partial closure of any portion of the facility will be carried out according to the procedures detailed in Section 13.4.

13.6 Closure Cost Adjustment [40 CFR 264.142(b) and (c)]

Within thirty (30) days after the end of MacDermid, Inc.'s fiscal year, the closure cost estimate (see Section 13.4.12) will be adjusted using the Department of Commerce's Annual Implicit Price Deflator for the Gross National product. The closure cost will also be revised no later than thirty (30) days following DEP's approval of a modification request (e.g. determine contamination is to the subgrade), if the change in the closure plan increases the cost of closure.

APPENDIX A
CHAIN-OF-CUSTODY

SECRET 01

[illegible]

APPENDIX B

APPENDIX IX ANALYTICAL METHODS

Environmental Protection Agency

Part 264, App. IX

APPENDIX IX—GROUND-WATER MONITORING LIST¹GROUND-WATER MONITORING LIST¹

Common name ^a	CAS RN ^a	Chemical abstracts service index name ^a	Sug- gested meth- ods ^b	PQL (µg/L) ^c
Acenaphthene.....	83-32-9	Acenaphthylene, 1,2-dihydro.....	8100 8270	200 10
Acenaphthylene.....	208-96-8	Acenaphthylene.....	8100 8270	200 10
Acetone.....	67-64-1	2-Propanone.....	8240	100
Acetophenone.....	98-86-2	Ethanone, 1-phenyl.....	8270	10
Acetonitrile; Methyl cyanide.....	75-05-8	Acetonitrile.....	8015	100
2-Acetylaminofluorene; 2-AAF.....	53-96-3	Acetamide, N-9H-fluoren-2-yl.....	8270	10
Acrolein.....	107-02-8	2-Propenal.....	8030 8240	5 5
Acrylonitrile.....	107-13-1	2-Propenenitrile.....	8030 8240	5 5
Aldrin.....	309-00-2	1,4:5,8-Dimethanonaphthalene, 1,2,3,4,10,10-hex- achloro- 1,4,4a,5,8,8a-hexahydro- (1a,4a,4aβ,5a,8a,8aβ)-	8080 8270	0.05 10
Allyl chloride.....	107-05-1	1-Propene, 3-chloro.....	8010 8240	5 100
4-Aminobiphenyl.....	92-67-1	[1,1'-Biphenyl]-4-amine.....	8270	10
Aniline.....	62-53-3	Benzenamine.....	8270	10
Anthracene.....	120-12-7	Anthracene.....	8100 8270	200 10
Antimony.....	(Total)	Antimony.....	6010 7040 7041	300 2,000 30
Aramite.....	140-57-8	Sulfurous acid, 2-chloroethyl 2-[4-(1,1- dimethylethyl)phenoxy]-1-methylethyl ester.	8270	10
Arsenic.....	(Total)	Arsenic.....	6010 7060 7061	500 10 20
Barium.....	(Total)	Barium.....	6010 7080	20 1,000
Benzene.....	71-43-2	Benzene.....	8020 8240	2 5
Benzo[a]anthracene; Benzanthra- cene.....	56-55-3	Benzo[a]anthracene.....	8100 8270	200 10
Benzo[b]fluoranthene.....	205-99-2	Benzo[e]acephenanthrylene.....	8100 8270	200 10
Benzo[k]fluoranthene.....	207-08-9	Benzo[k]fluoranthene.....	8100 8270	200 10
Benzo[ghi]perylene.....	191-24-2	Benzo[ghi]perylene.....	8100 8270	200 10
Benzo[a]pyrene.....	50-32-8	Benzo[a]pyrene.....	8100 8270	200 10
Benzyl alcohol.....	100-51-6	Benzenemethanol.....	8270	20
Beryllium.....	(Total)	Beryllium.....	6010 7090 7091	3 50 2
alpha-BHC.....	319-84-6	Cyclohexane, 1,2,3,4,5,6-hexachloro- ,(1a,2a,3β,4a,5β,6β)-	8080	0.05
beta-BHC.....	319-85-7	Cyclohexane, 1,2,3,4,5,6-hexachloro- ,(1a,2β,3a,4β,5a,6β)-	8250 8080	10 0.05
delta-BHC.....	319-86-8	Cyclohexane, 1,2,3,4,5,6-hexachloro- ,(1a,2a,3a,4β,5a,6β)-	8250 8080	40 0.1
gamma-BHC; Lindane.....	58-89-9	Cyclohexane, 1,2,3,4,5,6-hexachloro- ,(1a,2a,3β,4a,5a,6β)-	8250 8080	30 0.05
Bis(2-chloroethoxy)methane.....	111-91-1	Ethane, 1,1'-[methylenebis(oxy)]bis(2-chloro-.....	8270	10
Bis(2-chloroethyl)ether.....	111-44-4	Ethane, 1,1'-oxybis(2-chloro-.....	8270	10
Bis(2-chloro-1-methylethyl) ether; 2,2'-Dichlorodisopropyl ether.....	108-60-1	Propane, 2,2'-oxybis[1-chloro-.....	8010 8270	100 10

GROUND-WATER MONITORING LIST ¹—Continued

Common name ¹	CAS RN ²	Chemical abstracts service index name ³	Sug- gested meth- ods ⁴	POL (µg/L) ⁵
Bis(2-ethylhexyl) phthalate	117-81-7	1,2-Benzenedicarboxylic acid, bis(2-ethylhexyl) ester.	8060	20
Bromodichloromethane	75-27-4	Methane, bromodichloro-	8270	10
Bromofom; Tribromomethane	75-25-2	Methane, tribromo-	8010	1
4-Bromophenyl phenyl ether	101-55-3	Benzene, 1-bromo-4-phenoxy-	8240	5
Butyl benzyl phthalate; Benzyl butyl phthalate	85-68-7	1,2-Benzenedicarboxylic acid, butyl phenylmethyl ester.	8010	2
Cadmium	(Total)	Cadmium	8240	5
Carbon disulfide	75-15-0	Carbon disulfide	8060	5
Carbon tetrachloride	56-23-5	Methane, tetrachloro-	8270	10
Chlordane	57-74-9	4,7-Methano-1H-indene, 1,2,4,5,6,7,8,8-octachloro-2,3,3a,4,7,7a-hexahydro-	8010	1
p-Chloroaniline	106-47-8	Benzenamine, 4-chloro-	8240	5
Chlorobenzene	108-90-7	Benzene, chloro-	8000	0.1
Chlorobenzilate	510-15-6	Benzeneacetic acid, 4-chloro-2-(4-chlorophenyl)-n-hydroxy-, ethyl ester.	8250	10
p-Chloro-m-cresol	59-50-7	Phenol, 4-chloro-3-methyl-	8270	20
Chloroethane; Ethyl chloride	75-00-3	Ethane, chloro-	8010	2
Chloroform	67-66-3	Methane, trichloro-	8020	2
2-Chloronaphthalene	91-58-7	Naphthalene, 2-chloro-	8240	5
2-Chlorophenol	95-57-8	Phenol, 2-chloro-	8270	10
4-Chlorophenyl phenyl ether	7005-72-3	Benzene, 1-chloro-4-phenoxy-	8040	5
Chloroprene	126-99-8	1,3-Butadiene, 2-chloro-	8270	20
Chromium	(Total)	Chromium	8010	5
Chrysene	218-01-9	Chrysene	8240	5
Cobalt	(Total)	Cobalt	8120	10
Copper	(Total)	Copper	8270	10
m-Cresol	108-39-4	Phenol, 3-methyl-	8040	5
o-Cresol	95-48-7	Phenol, 2-methyl-	8270	10
p-Cresol	106-44-5	Phenol, 4-methyl-	8270	10
Cyanide	57-12-5	Cyanide	8010	50
2,4-D; 2,4-Dichlorophenoxyacetic acid	94-75-7	Acetic acid, (2,4-dichlorophenoxy)-	8240	5
4,4'-DDD	72-54-8	Benzene 1,1'-(2,2-dichloroethylidene)bis(4-chloro-	6010	70
4,4'-DDE	72-55-9	Benzene, 1,1'-(dichloroethenylidene)bis(4-chloro-	7190	500
4,4'-DDT	50-29-3	Benzene, 1,1'-(2,2,2-trichloroethylidene)bis(4-chloro-	7191	10
Diallate	2303-16-4	Carbamothioic acid, bis(1-methylethyl)-, S-(2,3-dichloro-2-propenyl) ester.	8100	200
Dibenz[a,h]anthracene	53-70-3	Dibenz[a,h]anthracene	8270	10
Dibenzofuran	132-64-9	Dibenzofuran	8270	10
Dibromochloromethane; Chlorodibromomethane	124-48-1	Methane, dibromochloro-	8010	1
1,2-Dibromo-3-chloropropane; DBCP	96-12-8	Propane, 1,2-dibromo-3-chloro-	8240	5
			8010	100
			8240	5
			8270	10

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GROUND-WATER MONITORING LIST ¹—Continued

Common name ¹	CAS RN ²	Chemical abstracts service index name ³	Sug- gested meth- ods ⁴	POL (µg/L) ⁵
1,2-Dibromoethane; Ethylene dibromide	106-83-4	Ethane, 1,2-dibromo	8010 8240	10 5
Di-n-butyl phthalate	84-74-2	1,2-Benzenedicarboxylic acid, dibutyl ester	8060 8270	5 10
o-Dichlorobenzene	95-50-1	Benzene, 1,2-dichloro	8010 8020 8120 8270	2 5 10 10
m-Dichlorobenzene	541-73-1	Benzene, 1,3-dichloro	8010 8020 8120 8270	5 5 10 10
p-Dichlorobenzene	106-46-7	Benzene, 1,4-dichloro	8010 8020 8120 8270	2 5 15 10
3,3'-Dichlorobenzidine	91-94-1	[1,1'-Biphenyl]-4,4'-diamino, 3,3'-dichloro	8270	20
trans-1,4-Dichloro-2-butene	110-57-6	2-Butene, 1,4-dichloro, (E)	8240	5
Dichlorodifluoromethane	75-71-8	Methane, dichlorodifluoro	8010 8240	10 5
1,1-Dichloroethane	75-34-3	Ethane, 1,1-dichloro	8010 8240	1 5
1,2-Dichloroethane; Ethylene dichloride	107-06-2	Ethane, 1,2-dichloro	8010 8240	0.5 5
1,1-Dichloroethylene; Vinylidene chloride	75-35-4	Ethene, 1,1-dichloro	8010 8240	1 5
trans-1,2-Dichloroethylene	156-60-5	Ethene, 1,2-dichloro, (E)	8010 8240	1 5
2,4-Dichlorophenol	120-83-2	Phenol, 2,4-dichloro	8040 9270	5 10
2,6-Dichlorophenol	87-65-0	Phenol, 2,6-dichloro	8270	10
1,2-Dichloropropane	78-87-5	Propane, 1,2-dichloro	8010 8240	0.5 5
cis-1,3-Dichloropropene	10061-01-5	1-Propene, 1,3-dichloro, (Z)	8010 8240	20 5
trans-1,3-Dichloropropene	10061-02-6	1-Propene, 1,3-dichloro, (E)	8010 8240	5 5
Dieldrin	60-57-1	2,7:3,6-Dimethanonaphth[2,3-b]oxirene, 3,4,5,6,9,9-hexachloro-1a,2,2a,3,6,6a,7,7a-octahydro-, (1a,2β,2a,3β,6β,6a,7β,7a)	8080 8270	0.05 10
Diethyl phthalate	84-66-2	1,2-Benzenedicarboxylic acid, diethyl ester	8060 8270	5 10
O,O-Diethyl O-2-pyrazinyl phosphorothioate; Thionazin Dimethoate	297-97-2	Phosphorothioic acid, O,O-diethyl O-pyrazinyl ester	8270	10
	60-51-5	Phosphorodithioic acid, O,O-dimethyl S-[2-(methylamino)-2-oxoethyl] ester	8270	10
p-(Dimethylamino)azobenzene	60-11-7	Benzenamine, N,N-dimethyl-4-(phenylazo)	8270	10
7,12-Dimethylbenz[a]anthracene	57-97-6	Benz[a]anthracene, 7,12-dimethyl	8270	10
3,3'-Dimethylbenzidine	119-93-7	[1,1'-Biphenyl]-4,4'-diamine, 3,3'-dimethyl	8270	10
alpha, alpha-Dimethylphenethylamine	122-09-8	Benzeneethanamine, alpha, alpha-dimethyl	8270	10
2,4-Dimethylphenol	105-67-9	Phenol, 2,4-dimethyl	8040 8270	5 10
Dimethyl phthalate	131-11-3	1,2-Benzenedicarboxylic acid, dimethyl ester	8060 8270	5 10
m-Dinitrobenzene	99-65-0	Benzene, 1,3-dinitro	8270	10
4,6-Dinitro-o-cresol	534-52-1	Phenol, 2-methyl-4,6-dinitro	8040 8270	150 50
2,4-Dinitrophenol	51-28-5	Phenol, 2,4-dinitro	8040 8270	150 50
2,4-Dinitrotoluene	121-14-2	Benzene, 1-methyl-2,4-dinitro	8090 8270	0.2 10
2,6-Dinitrotoluene	606-20-2	Benzene, 2-methyl-1,3-dinitro	8090 8270	0.1 10
Dinoseb; DNBP; 2-sec-Butyl-4,6-dinitrophenol	88-85-7	Phenol, 2-(1-methylpropyl)-4,6-dinitro	8150 8270	1 10
Di-n-octyl phthalate	117-84-0	1,2-Benzenedicarboxylic acid, dioctyl ester	8060 8270	30 10

GROUND-WATER MONITORING LIST ¹—Continued

Common name ²	CAS RN ³	Chemical abstracts service index name ⁴	Sug- gested meth- ods ⁵	POL (μg/L) ⁶
1,4-Dioxane	123-91-1	1,4-Dioxane	8015	150
Diphenylamine	122-39-4	Benzonamine, N-phenyl	8270	10
Disulfoton	298-04-4	Phosphorodithioic acid, O,O-diethyl S-[2-(ethylthio)ethyl]ester	8140	2
Endosulfan I	959-98-8	6,9-Methano-2,4,3-benzodioxathiepin, 6,7,8,9,10,10-hexachloro-1,5,5a,6,9,9a-hexahydro-, 3-oxide, (3a,5aβ,6a,9a,9aβ)-	8270	10
Endosulfan II	33213-65-9	6,9-Methano-2,4,3-benzodioxathiepin, 6,7,8,9,10,10-hexachloro-1,5,5a,6,9,9a-hexahydro-, 3-oxide, (3a,5aα,6β,9β,9aα)-	8080	0.1
Endosulfan sulfate	1031-07-8	6,9-Methano-2,4,3-benzodioxathiepin, 6,7,8,9,10,10-hexachloro-1,5,5a,6,9,9a-hexahydro-, 3,3-dioxide	8250	10
Endrin	72-20-8	2,7,3,6-Dimethanonaphth[2,3-b]oxirene, 3,4,5,6,9,9-hexachloro-1a,2,2a,3,6,6a,7,7a-octahydro-, (1aα, 2β,2aβ,3a,6a, 6aβ,7β,7aα)-	8080	0.5
Endrin aldehyde	7421-93-4	1,2,4-Methenocyclopenta[cd]pentalene-5-carboxaldehyde, 2,2a,3,3,4,7-hexachlorodecahydro-, (1a,2β,2aβ,4β,4aβ,5β,6aβ,6bβ,7R)-	8270	10
Ethylbenzene	100-41-4	Benzene, ethyl	8000	0.2
Ethyl methacrylate	97-63-2	2-Propenoic acid, 2-methyl-, ethyl ester	8270	10
Ethyl methanesulfonate	62-50-0	Methanesulfonic acid, ethyl ester	8240	5
Famphur	52-85-7	Phosphorothioic acid, O-(4-[(dimethylamino)sulfonyl]phenyl)-O,O-dimethyl ester	8015	10
Fluoranthene	206-44-0	Fluoranthene	8270	10
Fluorene	86-73-7	9H-Fluorene	8100	200
Heptachlor	76-44-8	4,7-Methano-1H-indene, 1,4,5,6,7,8,8-heptachloro-3a,4,7,7a-tetrahydro-	8270	10
Heptachlor epoxide	1024-57-3	2,5-Methano-2H-indeno[1,2-b]oxirene, 2,3,4,5,6,7,7-heptachloro-1a,1b,5,5a,6,6a,6-hexahydro-, (1aα,1bβ,2α,5a,5aβ,6β,6aα)-	8080	1
Hexachlorobenzene	118-74-1	Benzene, hexachloro	8270	10
Hexachlorobutadiene	87-68-3	1,3-Butadiene, 1,1,2,3,4,4-hexachloro	8120	5
Hexachlorocyclopentadiene	77-47-4	1,3-Cyclopentadiene, 1,2,3,4,5,5-hexachloro	8270	10
Hexachloroethane	67-72-1	Ethane, hexachloro	8120	0.5
Hexachlorophene	70-30-4	Phenol, 2,2'-methylenebis[3,4,6-trichloro-	8270	10
Hexachloropropene	1888-71-7	1-Propene, 1,1,2,3,3,3-hexachloro	8270	10
2-Hexanone	591-78-6	2-Hexanone	8240	50
Indeno[1,2,3-cd]pyrene	193-39-5	Indeno[1,2,3-cd]pyrene	8100	200
Isobutyl alcohol	78-83-1	1-Propanol, 2-methyl	8270	10
Isodrin	465-73-6	1,4,5,8-Dimethanonaphthalene, 1,2,3,4,10,10-hexachloro-1,4,4a,5,8,8a-hexahydro- (1a,4α,4aβ,5β,8β,8aβ)-	8015	50
Isophorone	78-59-1	2-Cyclohexen-1-one, 3,5,5-trimethyl	8270	10
Isosalrole	120-58-1	1,3-Benzodioxole, 5-(1-propenyl)	8270	10
Kepone	143-50-0	1,3,4-Metheno-2H-cyclobuta-[cd]pentalen-2-one, 1,1a,3,3a,4,5,5a,5b,6-decachlorooctahydro-	8270	10
Lead	(Total)	Lead	6010	40
Mercury	(Total)	Mercury	7420	1,000
Methacrylonitrile	126-98-7	2-Propenenitrile, 2-methyl	7421	10
Methapyrene	91-80-5	1,2-Ethanediamine, N,N-dimethyl-N'-2-pyridinyl-N'-(2-thenylmethyl)-	7470	2
			8015	5
			8240	5
			8270	10

GROUND-WATER MONITORING LIST ¹—Continued

Common name ¹	CAS RN ¹	Chemical abstracts service index name ¹	Sug- gested meth- ods ¹	POL (µg/L) ¹
Methoxychlor	72-43-5	Benzene, 1,1'-(2,2,2-trichloroethylidene)bis(4-methoxy-	8080 8270	2 10
Methyl bromide; Bromomethane	74-83-9	Methane, bromo-	8010 8240	20 10
Methyl chloride; Chloromethane	74-87-3	Methane, chloro-	8010 8240	1 10
3-Methylcholanthrene	56-49-5	Benzo[<i>a</i>]aceanthrylene, 1,2-dihydro-3-methyl-	8270	10
Methylene bromide; Dibromomethane	74-95-3	Methane, dibromo-	8010 8240	15 5
Methylene chloride; Dichloromethane	75-09-2	Methane, dichloro-	8010 8240	5 5
Methyl ethyl ketone; MEK	78-93-3	2-Butanone	8015 8240	10 100
Methyl iodide; Iodomethane	74-88-4	Methane, iodo-	8010 8240	40 5
Methyl methacrylate	80-62-6	2-Propenoic acid, 2-methyl-, methyl ester	8015 8240	2 5
Methyl methanesulfonate	66-27-3	Methanesulfonic acid, methyl ester	8270	10
2-Methylnaphthalene	91-57-6	Naphthalene, 2-methyl-	8270	10
Methyl parathion; Parathion methyl	298-00-0	Phosphorothioic acid, O,O-dimethyl O-(4-nitro-phenyl) ester	8140 8270	0.5 10
4-Methyl-2-pentanone; Methyl isobutyl ketone	108-10-1	2-Pentanone, 4-methyl-	8015 8240	5 50
Naphthalene	91-20-3	Naphthalene	8100 8270	200 10
1,4-Naphthoquinone	130-15-4	1,4-Naphthalenedione	8270	10
1-Naphthylamine	134-32-7	1-Naphthalenamine	8270	10
2-Naphthylamine	91-59-8	2-Naphthalenamine	8270	10
Nickel	(Total)	Nickel	6010 7520	50 400
o-Nitroaniline	88-74-4	Benzenamine, 2-nitro-	8270	50
m-Nitroaniline	99-09-2	Benzenamine, 3-nitro-	8270	50
p-Nitroaniline	100-01-6	Benzenamine, 4-nitro-	8270	50
Nitrobenzene	98-95-3	Benzene, nitro-	8090 8270	40 10
o-Nitrophenol	88-75-5	Phenol, 2-nitro-	8040 8270	5 10
p-Nitrophenol	100-02-7	Phenol, 4-nitro-	8040 8270	10 50
4-Nitroquinoline 1-oxide	56-57-5	Quinoline, 4-nitro-, 1-oxide	8270	10
N-Nitrosod-n-butylamine	924-16-3	1-Butanamine, N-butyl-N-nitroso-	8270	10
N-Nitrosodimethylamine	55-18-5	Ethanamine, N-ethyl-N-nitroso-	8270	10
N-Nitrosodimethylamine	62-75-9	Methanamine, N-methyl-N-nitroso-	8270	10
N-Nitrosodohexylamine	86-30-6	Benzenamine, N-nitroso-N-phenyl-	8270	10
N-Nitrosodipropylamine; Di-n-propylnitrosamine	621-64-7	1-Propanamine, N-nitroso-N-propyl-	8270	10
N-Nitrosomethylethylamine	10595-95-6	Ethanamine, N-methyl-N-nitroso-	8270	10
N-Nitrosomorpholine	59-89-2	Morpholine, 4-nitroso-	8270	10
N-Nitrosopiperidine	100-75-4	Piperidine, 1-nitroso-	8270	10
N-Nitrosopyrrolidine	930-55-2	Pyrrolidine, 1-nitroso-	8270	10
5-Nitro-o-toluidine	99-55-8	Benzenamine, 2-methyl-5-nitro-	8270	10
Parathion	56-38-2	Phosphorothioic acid, O,O-diethyl-O-(4-nitro-phenyl) ester	8270	10
Polychlorinated biphenyls; PCBs	See Note 7	1,1'-Biphenyl, chloro derivatives	8080 8250	50 100
Polychlorinated dibenzo-p-dioxins; PCDDs	See Note 8	Dibenzo[<i>b,e</i>][1,4]dioxin, chloro derivatives	8280	0.01
Polychlorinated dibenzofurans; PCDFs	See Note 9	Dibenzofuran, chloro derivatives	8280	0.01
Pentachlorobenzene	608-93-5	Benzene, pentachloro-	8270	10
Pentachloroethane	76-01-7	Ethane, pentachloro-	8240 8270	5 10
Pentachloronitrobenzene	82-68-8	Benzene, pentachloronitro-	8270	10
Pentachlorophenol	87-86-5	Phenol, pentachloro-	8040 8270	5 50
Phenacetin	62-44-2	Acetamide, N-(4-ethoxyphenyl)	8270	10
Phenanthrene	85-01-8	Phenanthrene	8100 8270	200 10

GROUND-WATER MONITORING LIST ¹—Continued

Common name ¹	CAS RN ²	Chemical abstracts service index name ³	Sug- gested meth- ods ⁴	POL (µg/L) ⁵
Phenol	108-95-2	Phenol.....	8040	1
p-Phenylenediamine	106-50-3	1,4-Benzenediamine	8270	10
Phorate	298-02-2	Phosphorodithioic acid, O,O-diethyl S- [(ethylthio)methyl] ester	8140	2
2-Picoline	109-06-8	Pyridine, 2-methyl.....	8270	10
Pronamide	23950-58-5	Benzamide, 3,5-dichloro-N-(1,1-dimethyl-2-pro- pyrnyl)-	8240	5
Propionitrile; Ethyl cyanide	107-12-0	Propanonitrile	8270	10
Pyrene	129-00-0	Pyrene.....	8015	60
Pyridine	110-86-1	Pyridine.....	8240	5
Safrole.....	94-59-7	1,3-Benzodioxole, 5-(2-propenyl)-	8100	200
Selenium	(Total)	Selenium.....	8270	10
			6010	750
			7740	20
			7741	20
Silver	(Total)	Silver	6010	70
			7760	100
Silvex; 2,4,5-TP	93-72-1	Propanoic acid, 2-(2,4,5-trichlorophenoxy)-	8150	2
Styrene.....	100-42-5	Benzene, ethenyl-	8020	1
			6240	5
Sulfide	18496-25-8	Sulfide	9030	10,000
2,4,5-T; 2,4,5-Trichlorophenoxyace- tic acid	93-76-5	Acetic acid, (2,4,5-trichlorophenoxy)-	8150	2
2,3,7,8-TCDD; 2,3,7,8-Tetrachloro- dibenzo-p-dioxin	1746-01-6	Dibenzo[b,e][1,4]dioxin, 2,3,7,8-tetrachloro-	8280	0.005
1,2,4,5-Tetrachlorobenzene.....	95-94-3	Benzene, 1,2,4,5-tetrachloro-	8270	10
1,1,1,2-Tetrachloroethane	630-20-6	Ethane, 1,1,1,2-tetrachloro-	8010	5
			8240	5
1,1,2,2-Tetrachloroethane	79-34-5	Ethane, 1,1,2,2-tetrachloro-	8010	0.5
			8240	5
Tetrachloroethylene; Perchloroeth- ylene; Tetrachloroethene	127-18-4	Ethane, tetrachloro-	8010	0.5
			8240	5
2,3,4,6-Tetrachlorophenol.....	58-90-2	Phenol, 2,3,4,6-tetrachloro-	8270	10
Tetraethyl dithiopyrophosphate; Sulfotepp	3689-24-5	Thiodiphosphoric acid [(HO) ₂ P(S) ₂ (O) ₂], tetraethyl ester	8270	10
Thallium	(Total)	Thallium	6010	400
			7840	1,000
			7841	10
Tin	(Total)	Tin	7870	8,000
Toluene	108-88-3	Benzene, methyl-	8020	2
			8240	5
o-Toluidine	95-53-4	Benzenamine, 2-methyl-	8270	10
Toxaphene	8001-35-2	Toxaphene	8080	2
			8250	10
1,2,4-Trichlorobenzene	120-82-1	Benzene, 1,2,4-trichloro-	8270	10
1,1,1-Trichloroethane; Methylchlor- oform	71-55-6	Ethane, 1,1,1-trichloro-	8240	5
1,1,2-Trichloroethane	79-00-5	Ethane, 1,1,2-trichloro-	8010	0.2
			8240	5
Trichloroethylene; Trichloroethene	79-01-6	Ethene, trichloro-	8010	1
			8240	5
Trichlorofluoromethane	75-69-4	Methane, trichlorofluoro-	8010	10
			8240	5
2,4,5-Trichlorophenol	95-95-4	Phenol, 2,4,5-trichloro-	8270	10
2,4,6-Trichlorophenol	88-06-2	Phenol, 2,4,6-trichloro-	8040	5
			8270	10
1,2,3-Trichloropropane	96-18-4	Propane, 1,2,3-trichloro-	8010	10
			8240	5
O,O,O-Triethyl phosphorothioate.....	126-68-1	Phosphorothioic acid, O,O,O-triethyl ester	8270	10
sym-Trinitrobenzene	99-35-4	Benzene, 1,3,5-trinitro-	8270	10
Vanadium	(Total)	Vanadium	6010	80
			7910	2,000
			7911	40
Vinyl acetate	108-05-4	Acetic acid, ethenyl ester	8240	5

GROUND-WATER MONITORING LIST ¹—Continued

Common name ²	CAS RN ³	Chemical abstracts service index name ⁴	Sug- gested meth- ods ⁵	POL (µg/L) ⁶
Vinyl chloride.....	75-01-4	Ethene, chloro-.....	8010	2
			8240	10
Xylene (total).....	1330-20-7	Benzene, dimethyl-.....	8020	5
			8240	5
Zinc.....	(Total)	Zinc.....	6010	20
			7950	50

¹ The regulatory requirements pertain only to the list of substances; the right hand columns (Methods and POL) are given for informational purposes only. See also footnotes 5 and 6.

² Common names are those widely used in government regulations, scientific publications, and commerce; synonyms exist for many chemicals.

³ Chemical Abstracts Service registry number. Where "Total" is entered, all species in the ground water that contain this element are included.

⁴ CAS index names are those used in the 9th Cumulative Index.

⁵ Suggested Methods refer to analytical procedure numbers used in EPA Report SW-846 "Test Methods for Evaluating Solid Waste", third edition, November 1986. Analytical details can be found in SW-846 and in documentation on file at the agency. CAUTION: The methods listed are representative SW-846 procedures and may not always be the most suitable method(s) for monitoring an analyte under the regulations.

⁶ Practical Quantitation Limits (PQLs) are the lowest concentrations of analytes in ground waters that can be reliably determined within specified limits of precision and accuracy by the indicated methods under routine laboratory operating conditions. The PQLs listed are generally stated to one significant figure. CAUTION: The PQL values in many cases are based only on a general estimate for the method and not on a determination for individual compounds; PQLs are not a part of the regulation.

⁷ Polychlorinated biphenyls (CAS RN 1336-36-3); this category contains congener chemicals, including constituents of Aroclor-1216 (CAS RN 12674-11-2), Aroclor-1221 (CAS RN 11104-28-2), Aroclor-1232 (CAS RN 11141-16-5), Aroclor-1242 (CAS RN 53469-21-9), Aroclor-1248 (CAS RN 12672-29-6), Aroclor-1254 (CAS RN 11097-69-1), and Aroclor-1260 (CAS RN 11096-82-5). The PQL shown is an average value for PCB congeners.

⁸ This category contains congener chemicals, including tetrachlorodibenzo-p-dioxins (see also 2,3,7,8-TCDD), pentachlorodibenzo-p-dioxins, and hexachlorodibenzo-p-dioxins. The PQL shown is an average value for PCDD congeners.

⁹ This category contains congener chemicals, including tetrachlorodibenzofurans, pentachlorodibenzofurans, and hexachlorodibenzofurans. The PQL shown is an average value for PCDF congeners.

[52 FR 25947, July 9, 1987]

ATTACHMENT D

PERSONNEL TRAINING PLAN

Attachment D

Personnel Training

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8.0 PERSONNEL TRAINING

8.1 Regulatory Requirements

Federal Regulations (CFR 40) specifically require owners or operators of a Hazardous Waste Management (HWM) facility to prepare an outline of introductory and continuing training programs "to prepare persons to operate or maintain the HWM facility in a safe manner". The regulatory requirements contained in 264.16 regarding employee training are as follows:

- Facility personnel must successfully complete a program of classroom instruction or on-the-job training that teaches them to perform their duties in a way that ensures the facility's compliance with the requirements of this part.
- This program must be directed by a person trained in hazardous waste management procedures and shall include instructions which teach facility personnel hazardous waste management procedures (including contingency plan implementation) relevant to the positions in which they are employed.
- At a minimum, the training program must be designed to ensure that facility personnel are able to respond effectively to emergencies by familiarizing them with emergency procedures, emergency equipment, and emergency systems, including, where applicable:
 - Procedures for using, inspecting, repairing, and replacing facility emergency and monitoring equipment;
 - Key parameters for automatic waste feed cutoff systems;
 - Communications or alarm systems;
 - Response to fires or explosions;
 - Response to ground water contamination incidents;
 - Shutdown of operations; and
 - Properties and hazardous nature of the hazardous waste at the facility.

- The training document detailed in this plan includes training relevant to the actual tasks at this facility. This plan may include training in the following actual tasks at the facility:
 - Use of personnel protective equipment;
 - Safety measures;
 - Manifest tracking, preparation;
 - Sampling procedures and handling;
 - Facility operation and maintenance;
 - Contingency measures;
 - Facility inspection;
 - Regulatory requirements;
 - Facility recordkeeping;
 - Maintaining site security; and
 - Prevention of fire, spill, and explosion; and
 - Familiarizes employees with the types of wastes handled at the facility and the hazards inherent in the handling of these wastes.
- Facility personnel must successfully complete the training program within six months of their assignment to the facility and must take part in an annual review of the program.
- Facility personnel engaged in hazardous waste activities will not work in unsupervised positions until their training is complete.
- The owner or operator must maintain documentation applicable to the training program outlined in 264.16.

In accordance with 29 CFR 1910.120(p)(7), all designated response personnel at MacDermid, Inc. who are involved with hazardous waste operations will receive at least 24 hours initial training (completed on February 19-20-21, 1990) and 8 hours of refresher training annually, thereafter. Provided under Appendix Y is a list of the personnel who attended the 24 hour training course and the instructor Michael H. Ziskin's qualifications.

At MacDermid, Inc., personnel will only respond to incidental releases of hazardous substances where the substance can be absorbed,

neutralized or otherwise controlled at the time of release by personnel in the immediate area or by maintenance personnel. MacDermid, Inc. personnel will not respond to an uncontrolled "emergency response" as defined under 29 CFR 1910.120(a)(3). In addition, MacDermid, Inc. will not conduct post-emergency response activities. Examples of the releases that will be managed by MacDermid, Inc. personnel are listed below:

- (1) Compatible material spills of 5, 55 and 330 gallon containers.
- (2) Leaks from valves, pumps, hoses of compatible materials.
- (3) Small fires which can be extinguished with on-site fire extinguishers.

8.2 Training Outline

The four elements of personnel training, critical to safe hazardous waste management, are as follows:

A. PERSONNEL SAFETY TRAINING

- Hazards and characteristics of chemical wastes;
- Selection and use of protective clothing and equipment for emergency situations;
- Health effects of chemicals in the work environment.

B. EMERGENCY PLANNING

- Emergency response;
- Contingency planning.

C. FACILITY OPERATION AND MAINTENANCE

- Hazard minimization through proper facility operation and maintenance

D. MAINTAINING RECORDS

- Regulatory compliance

Activities of hazardous waste facilities personnel can be distinguished as follows:

- Routine day-to-day hazardous waste handling, storage, and treatment operations.
- Emergency response activities in accordance with site contingency plan.

Personnel engaged in either of these activities, along with on-site supervisory personnel responsible for routine day-to-day hazardous waste management must be trained in pertinent aspects of proper hazardous waste handling.

Clearly, a training program which would provide the same level of instruction to all on-site personnel is neither workable nor desirable. Training must, therefore, be correlated to job descriptions. Consequently, the individual's position and specific duties will dictate the level of personnel training he or she will receive.

In this report, four (4) types of training programs are presented which are intended to cover all employees who take part in hazardous and CT-regulated waste management. Table 8.1 summarizes the types of training received by all employees requiring training. The department heads and/or Compliance Administrator, and/or designated professionally trained third party (i.e. consultant) will be responsible for the supervision of all training activities. All hazardous waste trainers must be trained in hazardous waste management procedures. The four programs are:

8.2.1 General Training Information Program

This program is intended to provide basic safety training information to all employees. The basic information presented

in this program is a necessary foundation for more specialized training that is orientated to specific jobs. Table 8.2 gives an outline of this classroom training program.

8.2.2 On-The-Job Training Program

This program is geared towards personnel who handle the wastes generated and received at the facility. These workers will be trained in area of marking and labeling containers, inspecting containers from structural defects, using emergency equipment, and shutdown operations. Physical and chemical hazards of the wastes generated and received will also be reviewed under this program. Table 8.3 gives an outline of this training program.

8.2.3 Limited Training at MacDermid Inc.

The Limited Training Program is geared towards personnel having more limited spheres of activity, responsibility and authority. These workers can be trained at a level less comprehensive than that of management personnel. Furthermore, depending upon the specific position, training in one or more areas relative to hazardous waste management might not be necessary.

Table 8.4 gives an outline of this classroom training program.

8.2.4 Broad Training at MacDermid, Inc.

At MacDermid, Inc., a relatively small number of individuals will be in supervisory and decision-making positions

with a degree of authority and responsibility which warrants broad training in all aspects of hazardous waste management pertinent to their facility.

The Broad Training Program is designed to provide management level personnel with the necessary background and perspective for decision-making activities which can impact both the operation and condition of the facility and health and welfare of the surrounding community. This level of instruction is comprehensive and constitutes a detailed overview of all pertinent aspects of hazardous waste management.

Table 8.5 gives an outline of this classroom training program.

8.3 Release Prevention and Response

All facility management personnel must become intimately familiar with the established facility Hazardous Waste Contingency Plan.

8.3.1 Drills

Drills will be held to practice all of these procedures and are treated with the same seriousness as an actual emergency.

During the on-site training session, the facility Contingency Plan will serve as the bases for discussion in this section.

TABLE 8.1

TRAINING REQUIREMENTS

MACDERMID, INC.
WATERBURY, CONNECTICUT

<u>Job Title</u>	<u>Name</u>	<u>General</u>	<u>Training Type</u>		<u>Broad</u>
			<u>On-The-Job</u>	<u>Limited</u>	
All Manufacturing Employees		X	X		
Compliance Administrator	Cherrie Gillis	X			X
Emergency Coordinator	Bill Schweickher	X			X
Alternate Emergency Coordinators (2)	Bob Ardziejaskas	X			X
Driver - Waste Handler	P. Guillet Fred Pasquarillo 1/93		X	X	
	T. Prescott	X	X	X	
	K. Ritucci	X	X	X	
	E. Gray	X	X	X	
Traffic Supervisor for Wastes	L. Montaigne	X		X	
Materials Handler-Recyclable Materials - Group Leader	D. Howell	X		X	
Etchant Production - Group Leader	H. Zembroski	X		X	
Quality Control Department	Jose Vetez Mike Millard 1/93	X	X		
Hazardous Waste Coordinator - Canadian Shipments/Non routine Shipments	C. Gillis	X		X	X
Quality Control Manager (Manufacturing)	A. Picha	X		X	
Shipping/Receiving Department - Group Leader	D. Fortier	X		X	

TABLE 8.2
GENERAL TRAINING INFORMATION PROGRAM

MACDERMID, INC.
WATERBURY, CONNECTICUT

I. GENERAL CHEMICAL INTRODUCTION

A. Acids - A hydrogen containing substance which dissociates in solution in water to produce one or more hydrogen ions. Some examples handled at MacDermid:

1. Nitric Acid
 - a. Fumes in air
 - b. Attacks many metals
2. Sulfuric Acid
 - a. Generates extreme heat when mixed with water
 - b. Attacks many metals
3. Hydrochloric Acid
 - a. Fumes in air
 - b. Attacks many metals
4. Hydrofluoric Acid
 - a. Attacks glass as well as metals
5. Chromic Acid
 - a. Dusty when dry
 - b. Attacks many metals as a liquid

NOTE: Always add acids to water (A to W rule). Always use protective equipment when handling

B. Alkaline Materials - A substance having basic properties (pH higher than 7). A Base-dissociates in solution in water to produce one or more hydroxyl ions. Some examples handled at MacDermid:

1. Sodium Hydroxide (caustic soda)
 - a. Dry or liquid
 - b. Causes severe burns
2. Potassium Hydroxide (caustic potash)
 - a. Dry or liquid
 - b. Causes severe burns
3. Ammonium Hydroxide
 - a. Ammonia odor
4. Sodium Carbonate (soda ash)

NOTE: Hydroxides can cause severe burns that do not appear on immediate contact. Dry material should be added to water with agitation. Always use protective equipment when handling.

TABLE 8.2 (continued)
GENERAL TRAINING INFORMATION PROGRAM

MACDERMID, INC.
WATERBURY, CONNECTICUT

- C. Flammables -Easily ignited. Flash points less than 100 degrees Fahrenheit. Some examples handled at MacDermid:

1. Methanol
2. Cyastat SP (trade name)
3. Sodium Hydrosulfite
4. Any red label item (red diamond with flame)
5. Cleaning mixing pots/tanks with solvents Required mandatory equipment:
 - a. Organic mist cartridge respirator
 - b. Neoprene gloves
 - c. Protective clothing

NOTE: No smoking when handling. No open flames nearby. Always use grounding stations and protective equipment.

- D. Poisons and Toxic Substances - Materials that through chemical action can kill, injure, or impair. Some examples handled at MacDermid:

1. Cyanides
2. Darmex (trade name)
3. Formaldehyde
4. Metal salts

NOTE: Do not mix cyanides with acid. This generates poisonous fumes. Do not ingest poisons or toxic materials. Avoid breathing fumes or dust. Always use protective equipment when handling.

- E. Oxidizers -Materials which cause oxidation of other substances (chemical addition of oxygen). Temperatures can be reached that may cause ignition of the oxidized material. Some examples handled at MacDermid:

1. Sodium Nitrate
2. Chromic Acid
3. Sodium Chlorite
4. Persulfates

NOTE: Avoid contact with corrosives. Special cases can cause fires - use caution when handling. Always use protective equipment when handling.

TABLE 8.2 (continued)
GENERAL TRAINING INFORMATION PROGRAM

MACDERMID, INC.
WATERBURY, CONNECTICUT

- F. Solvents - (A substance capable of dissolving another substance) Alcohol, Ethyl Acetate, Ethyl Alcohol, Hydro-Carbon Solvent, Kerosene, Methanol, Methyl Ethyl Ketone, Organic Solvents, Toluene, Xylene, Xylol. Are usually flammable or combustible liquids. They contribute to air pollution and fire hazards. Inhalation, eyes and skin contact must be avoided. Mandatory equipment:
1. Respirator (type depends on solvent)
 2. Neoprene gloves
 3. Protective clothing

II. PROTECTIVE EQUIPMENT

A. Description

1. Face shields - worn when filling containers or adding chemicals to a mix that could cause splashing. This is optional but mandatory under circumstances as: extracting lab samples from 5 gal., 55 gal. containers, extracting raw material samples from trailer loads, disconnecting acid lines from pumps. Face shields will protect the eyes, face and neck in areas where workers are exposed to hazardous liquids, gases or sprays, or where there is the possibility of being hit by light objects.
2. Fume measuring device - instrument used to measure trace amounts of specific chemical fumes in the air.
3. Safety Glasses - mandatory. Must be worn at all times in the manufacturing areas.
4. Gloves - a safety precaution. Should be worn at all times when handling any and all types of chemicals. Rubber and cloth (for dirty drums, etc.) gloves are available, Neoprene for solvents.
5. Goggles - Full face protection. Used for maximum eye protection to keep dusts, mists, and splashing chemicals from eye contact strongly recommended. Mandatory in areas with severe eye hazards. Workers exposed to fumes or vapors or possible liquid splashes must wear goggles.
6. Grounding station - an electrical mechanical device to eliminate static electrical charges or sparks. Used between containers to transfer flammable materials.
7. Hard hats - worn when working below a platform, recommended. Required where there is the danger of falling objects or chemical splashes.

TABLE 8.2 (continued)
GENERAL TRAINING INFORMATION PROGRAM

MACDERMID, INC.
WATERBURY, CONNECTICUT

8. Harness for tank entry - a safety device worn when entering a confined space. It is used to extricate a person quickly in case of an emergency.
9. Lock out for power equipment - a mechanical device used to make electrically driven equipment inoperable. This is used for maintenance purposes.
10. Respirators - used when working with hazardous dusts and mists. Several types are available and the correct cartridge should be used. Optional but recommended in most cases. Required in some cases.
11. Scrubbers - exhausts which remove hazardous fumes from the air. The fumes are scrubbed with water or with a sodium hydroxide solution (two types of scrubbers) before release to the atmosphere. These are not to be confused with exhaust fans that vent directly to the outside.

B. Clothing

1. Provided by MacDermid
2. Are not chemical resistant
3. Aprons and rubber suits are available

C. Shoes

1. Steel toes required
2. Provided by MacDermid - two pairs per year for each employee.
3. Uppers not usually chemically resistant - soles usually will be.
4. Rubbers or boots are provided, if necessary

First Aid - Emergency treatment of acute poisoning: Acute poisoning may be the result of entry into the body of large or concentrated doses of a poison through:

1. Breathing (inhalation)
2. Swallowing (ingestion)
3. Skin absorption

General Procedures:

a. Inhalation:

1. Remove victim from contaminated area. Rescuers should be properly protected or provided with life lines.

TABLE 8.2 (continued)
GENERAL TRAINING INFORMATION PROGRAM

MACDERMID, INC.
WATERBURY, CONNECTICUT

2. Keep victim warm (not hot) and quiet. Lying flat is usually the best position.
 3. If breathing has stopped, give artificial respiration.
 4. Administer oxygen, if it is available.
 5. Keep breathing passage open. Examine mouth for false teeth and chewing gum and if present, remove them.
- b. Ingestion:
1. Attempt to empty the stomach by causing vomiting by use of an emetic. This should be done even if a period of several hours has passed since the poison was swallowed. Exceptions: Corrosive chemicals such as strong acids or caustic alkalies; victim having convulsions; victim unconscious.
 2. Dilute the poison by administering fluids in any of the following forms:
 - a. Plain tap water: 3-4 glasses.
 - b. Soapy water: 2-3 glasses.
 - c. Table salt in warm water: One tablespoon to an ordinary 8-ounce tumbler.
 - d. Milk: 3-4 glasses
- If these fluids are vomited, which is desirable, the dose may be repeated several times.
3. Give the victim a "universal antidote" i.e. a mixture of powdered burnt toast (charcoal), strong tea, and milk of magnesia. This will absorb and neutralize many poisons. (One piece of toast and 4 tablespoons of milk of magnesia in a cup of strong tea.
- c. Skin contact:
1. Dilute the contaminating substance with large amounts of water. This is best done in a shower, but may also be done with a hose, buckets or other means. The water should be lukewarm if possible.
 2. Remove contaminated clothing. Those assisting the victim should protect their own skin with gloves, if available.

TABLE 8.2 (continued)
GENERAL TRAINING INFORMATION PROGRAM

MACDERMID, INC.
WATERBURY, CONNECTICUT

3. Chemical burns of the eye should be treated with large amounts of water for 15 minutes or with a weak solution of bicarbonate of soda (a level teaspoonful of bicarbonate to 1 quart of warm, clean water).

III. MANUFACTURING EQUIPMENT USAGE

A. Forklift Training

1. Description
 - a. Gas
 - b. Electric
2. Load Limits
 - a. Determined by equipment availability within each department
3. Operation
 - a. Generally on the job training will be provided
 - b. Occasional instruction from Clarklift is provided
4. Maintenance
 - a. Daily check of oil and water
 - b. Routine maintenance under contract with Clarklift
5.
 - a. Check wheels on trucks before entering with forklift
 - b. No racing or wild driving
 - c. Sound horn near blind corners
 - d. No riders on skids or elsewhere

B. Emergency Equipment and Use.

1. Air Packs (Scott) - Self-contained life support system used for any chemical emergency. Located near most often used entrances.
2. Eyewashes - Located throughout each department on the floor and on the platforms. May be in combination with a shower and is used to wash eyes should chemicals come into contact with them.
3. Fire Alarms - There are many pull stations throughout the building and at all exits. You should become familiar with their locations.
4. Fire Blankets - There are a few blankets within the building. They are used to smother a fire on a person's body. You should be aware of their locations.

TABLE 8.2 (continued)
GENERAL TRAINING INFORMATION PROGRAM

MACDERMID, INC.
WATERBURY, CONNECTICUT

5. Fire Extinguishers - There are many located throughout the building. They are general purpose, ABC types, good for any fire in this building. You should be familiar with their location.
6. Fire Hoses - There are a few fire hoses located in the building. They are high pressure and require two people to operate. One holds the hose while the other operates the valve.
7. First Aid Cabinet - Located throughout the building. There is a supply of bandages, antiseptics, etc., for treatment of minor injuries.
8. Oxygen - One unit located in each of the main areas. For emergency treatment only when overcome by fumes or other respiratory emergencies.
9. pH Control - A sterile phosphate buffer solution used to neutralize acid and alkali burns of the eyes or skin.
10. Showers - Located in combination with most eyewash stations. These are for emergency use only. There is also one in each of the two men's rooms in the manufacturing area. These are general purpose as well as for emergencies.
11. Stretcher - There is one stretcher available for emergency use.

C. Production Equipment

1. Each department has an assortment of equipment. Some of this is specialized for that department and some is general equipment available to all departments.
2. On-the-job training will be provided in all phases of the equipment as it pertains to your position.

D. Safety Equipment

1. All items listed in Table 10.2 of the Contingency Plan Protective Equipment are primarily used for safety purposes.

IV. OPERATION

A. Work Flow

1. Order is received from customer.
2. Finished goods inventory is allocated.
3. At some point minimum stock levels are reached and a production order is generated.
4. Raw materials are ordered and received.

TABLE 8.2 (continued)
GENERAL TRAINING INFORMATION PROGRAM

MACDERMID, INC.
WATERBURY, CONNECTICUT

5. Manufacturing schedules and produces the product.
 6. Material is placed in finished goods storage.
 7. Materials are shipped as needed.
- B. Security
1. ADT on manufacturing plant (Gear Street and Huntingdon Avenue)
 2. Sonitrol on warehouse (raw and finished) and tanker garage
 3. Each department is responsible for securing their location at the close of business.
 4. The storage yard has gates that are locked at the end of the day.
- C. Buddy System
1. No one works alone.
 2. Someone always is within shouting distance.
- D. Accidents
1. Report immediately to supervisor.
 2. File a report regardless of extent of injuries or lack of injuries.
 3. Employees will be trained in the basic points of the Contingency Plan and its implementation (e.g. evacuation procedures).

TABLE 8.3 - ON-THE-JOB TRAINING PROGRAM

MACDERMID, INC.

- A. On-the-job training shall be conducted by the Group Leader of each department in Manufacturing.
- B. All wastes that are recycled by MacDermid will have the same or similar hazardous characteristics of materials being manufactured. Thereby, proper handling, hazardous characteristics, personal protective equipment training is one in the same for manufactured and waste materials.
- C. Information on marking, labelling, and proper DOT containers for wastes comes from the Production Manager, Compliance Manager or Process Engineer in Manufacturing each trained in DOT 49 CFR.
- D. Group Leaders of the department supervise new employees with hands-on training by initially walking through all the steps and procedures of the job until he feels confident that person can do the job with little or no supervision.
- E. Basic training will consist of the following:
 - 1. Waste feed cut-off systems as applicable to that job.
 - 2. Procedures for using, inspecting, repairing and replacing facility emergency and monitoring equipment.
 - 3. Communications and alarm systems for the department.
 - 4. Shutdown of operations for that department area.
 - 5. Properties and hazardous nature of hazardous waste and hazardous materials for items handled.
 - 6. OSHA 29 CFR 1910.1200 classroom training is mandatory to all employees when first hired and all employees prior to the Hazardous Communication standards that have been employed by MacDermid, have also had this training.
 - 7. OSHA 29 CFR 1910.120 24 hour training and 8 hour annual refresher depending on the job function.

TABLE 8.4

LIMITED TRAINING

MACDERMID, INC.
WATERBURY, CONNECTICUT

FUNCTION:	Driver - Waste Handler
DUTY:	Transportation - Chemicals
TASK:	<ul style="list-style-type: none">• Pick-up waste reclaim from customer and transport bulk waste etchant to reclaim facility or transfer facility.
ELEMENT:	<ul style="list-style-type: none">• Transports drummed waste reclaim to Waterbury, signs manifest as transporter.• Transports bulk waste reclaim from customer or Production Storage to railcar on Freight St.• Must complete a discrepancy checklist for each manifested shipment picked up.• Signs off as transporter and receiver at Freight St.
QUALIFICATIONS:	Licensed driver for vehicle operated, training in DOT and EPA Transportation Regulations. Should have at least a high school education.
TRAINING:	<ol style="list-style-type: none">1. <u>Personal Protection Equipment</u><ul style="list-style-type: none">• Hard hat, rubber gloves, rain gear (rubber), rubber boots, face mask, safety goggles, safety glasses.2. <u>Hazardous/Characteristics of wastes</u><ul style="list-style-type: none">• Definition of corrosive, oxidizer, flammables, incompatibility, storage for compatibility on truck.3. <u>Waste manifest/labelling system</u><ul style="list-style-type: none">• Requirements for completion of waste labels, requirements for manifest completion.• Drivers carry examples with them in a 3 ring notebook.• Manifest Discrepancy Checklist required with each manifest to be completed and attached to manifest for MacDermid records.

TABLE 8.4 (continued)

LIMITED TRAINING

MACDERMID, INC.
WATERBURY, CONNECTICUT

4. Forklift Operations
 - Daily inspection for fluid levels, leaks, brake, chain failure.
 - Know equipment capacity of truck and weight of what is picked-up.
 - Back down a ramp when carrying a load.
 - Aware truck can flip easily.
 - When leaving truck, turn off completely and set hand brake, Lower forks to ground.
5. Contingency Plan for Drivers
 - Procedure list (call list) for emergencies as state police, telephone numbers in states in which they travel through or pick-up wastes.
 - MacDermid emergency contact numbers at facility.
6. DOT 49 CFR Hazardous Materials - Review
 - Table 172.101/Review Motor Carrier Regulations on loading, unloading, truck safety inspections for lights, brakes, etc.
7. OSHA 29 CFR 1910.120

FUNCTION: Traffic Supervisor for Wastes

TASK: Schedules company truck pick-ups for reclaim wastes and outgoing wastes. Types company bills of lading and railcar manifests. Makes arrangements for railcar shipments for reclaim.

ELEMENT:

- After receipt of shipment of waste, make appropriate mailings for manifests and files for 3 year retention.
- Corrects manifests for addresses, etc. by initialing and dating change.
- Adds method of storage to incoming manifests as S01, S02.

TABLE 8.4 (continued)

LIMITED TRAINING

MACDERMID, INC.
WATERBURY, CONNECTICUT

- Follow-up outgoing manifests to make sure TSDF signed copy is back in 15 days.
- Makes out all state(s) required transportation reports.

EDUCATION: At least a high school education, typing ability.

- TRAINING:
1. Waste Manifest System
 - Areas of manifest needed for completion by generator.
 - Discrepancy requirements/mailling procedures.
 - Recordkeeping (retention)
 2. OSHA 29 CFR 1910.1200
 - Employee's rights
 - Location of MSDS
 - How to read an MSDS.
 - Labelling information
 3. OSHA 29 CFR 1910.120

FUNCTION: Materials Handler - Recyclable Material - Group Leader

DUTY: Logs in manifests - Production/store recycled material.
Supervises loading/unloading wastes/storage/ manifests.

- ELEMENT:
- Supervises application of waste/shipping labels for shipment off-site.
 - Supervises and assists off-loading/loading of wastes using forklift from trucks.
 - Supervises and assists storage of drummed wastes.
 - Inspects storage and keeps inspection book for waste storage

EDUCATION: At least a high school education. Must be able to read/write English. Forklift and truck operation.

TABLE 8.4 (continued)

LIMITED TRAINING

MACDERMID, INC.
WATERBURY, CONNECTICUT

TRAINING:

1. OSHA 29 CFR 1910.120 (24 hour)
2. OSHA 29 CFR 1910.1200
 - Employee's rights
 - Location of MSDS
 - How to read an MSDS.
 - Labelling information
3. Forklift Operations
 - Daily inspection for fluid levels, leaks, brake, chain failure.
 - Know equipment capacity of truck and weight of what is picked-up.
 - Back down a ramp when carrying a load.
 - Aware truck can flip easily.
 - When leaving truck, turn off completely and set hand brake, Lower forks to ground.
4. Manifest/Waste handling System
 - Areas of manifest needed for completion by generator.
 - Discrepancy requirements/mailling procedures.
 - Recordkeeping (retention)

FUNCTION:

Etchant Production - (Group Leaders)

DUTY:

Performs recycling of material/bulk storage/manifests.

Receives in and ships out via manifests, bulk etchant, assists loading/unloading of tanks for bulk spent etchant.

ELEMENT:

- Inspects bulk storage area and keeps inspection book for bulk storage and metal hydroxide sludge are.
- Logs in received and shipped bulk waste etchant.
- Assists loading/unloading bulk waste from tankers.
- Takes samples for waste analysis - etchant and sends to QC.

TABLE 8.4 (continued)

LIMITED TRAINING

MACDERMID, INC.
WATERBURY, CONNECTICUT

EDUCATION:

Should have at least high school education and read/write English.

TRAINING:

1. OSHA 29 CFR 1910.1200
 - Employee's rights
 - Location of MSDS
 - How to read an MSDS.
 - Labelling information
 2. Forklift Operations
 - Daily inspection for fluid levels, leaks, brake, chain failure.
 - Know equipment capacity of truck and weight of what is picked-up.
 - Back down a ramp when carrying a load.
 - Aware truck can flip easily.
 - When leaving truck, turn off completely and set hand brake, Lower forks to ground.
 3. Manifest/Waste handling System
 - Areas of manifest needed for completion by generator.
 - Discrepancy requirements/mailling procedures.
 - Recordkeeping (retention)
 4. 29 CFR 1910.120
 5. Hazardous/Characteristics of wastes
 - Definition of corrosive, oxidizer, flammables, incompatibility, storage for compatibility on truck.
 6. Personal Protection Equipment
 - Hard hat, rubber gloves, rain gear (rubber), rubber boots, face mask, safety goggles, safety glasses.
-

TABLE 8.4 (continued)
LIMITED TRAINING

MACDERMID, INC.
WATERBURY, CONNECTICUT

TASK:	<u>True Waste Handler</u> - Solvents/Inks
DUTY:	Prepare solvents/inks for segregation of type waste, storage, drums for empty bottles/cans and preparation of shipment in accordance to the specific TSDF requirement to be used.
ELEMENT:	<div><div>A.</div><div><ul style="list-style-type: none">• Obtain correct DOT drums for waste• Mark drums as to type waste (See which TSDF will be utilized)• Store waste in solvent/ink waste area• Keeps incoming/outgoing waste logbook• Prepare manifest documentation• Keeps area inspection logbook• Prepare labeling information</div></div> <div><div>B.</div><div><ul style="list-style-type: none">• New Solvents/inks -(Not already analyzed and accepted by a specific TSDF)• Obtain 1 quart sample plus type and percentage of contents, waste characteristics• Send sample to Regulatory Manager for finding TSDF</div></div> <div><div>C.</div><div><ul style="list-style-type: none">• Arrange for transportation to TSDF</div></div>
EDUCATION:	Should have at least high school education, 2 to 4 years college education with some chemical back-ground would be helpful. Must read/write English.
TRAINING:	<div><div>1.</div><div><u>OSHA 29 CFR 1910.120</u> (24 hour)</div></div> <div><div>2.</div><div><u>OSHA 29 CFR 1910.1200</u><ul style="list-style-type: none">• Employee's rights• Location of MSDS• How to read an MSDS.• Labelling information</div></div> <div><div>3.</div><div><u>Forklift Operations</u><ul style="list-style-type: none">• Daily inspection for fluid levels, leaks, brake, chain failure.</div></div>

TABLE 8.4 (continued)
LIMITED TRAINING

MACDERMID, INC.
WATERBURY, CONNECTICUT

- Know equipment capacity of truck and weight of what is picked-up.
 - Back down a ramp when carrying a load.
 - Aware truck can flip easily.
 - When leaving truck, turn off completely and set hand brake, Lower forks to ground.
4. Manifest/Waste handling System
- Areas of manifest needed for completion by generator.
 - Discrepancy requirements/mailling procedures.
 - Recordkeeping (retention)
5. Hazardous/Characteristics of wastes
- Definition of corrosive, oxidizer, flammables, incompatibility, storage for compatibility on truck.
6. Personal Protection Equipment
- Hard hat, rubber gloves, rain gear (rubber), rubber boots, face mask, safety goggles, safety glasses.

FUNCTION: Q.C. Department

TASK: Analyze incoming recyclable material

ELEMENT:

- Analyzes recyclable material per established parameters.
- Keeps logbook on recycle tracking and logs we received and shipped manifests for recyclable material.
- Can reject material with authorization to return to customer.

EDUCATION: At least high school education and 2 to 4 years chemical background. Must read/write English.

TRAINING:

1. OSHA 29 CFR 1910.120 (24 hour)

TABLE 8.4 (continued)
LIMITED TRAINING

MACDERMID, INC.
WATERBURY, CONNECTICUT

2. OSHA 29 CFR 1910.1200
 - Employee's rights
 - Location of MSDS
 - How to read an MSDS.
 - Labelling information
3. Forklift Operations
 - Daily inspection for fluid levels, leaks, brake, chain failure.
 - Know equipment capacity of truck and weight of what is picked-up.
 - Back down a ramp when carrying a load.
 - Aware truck can flip easily.
 - When leaving truck, turn off completely and set hand brake, Lower forks to ground.
4. Manifest/Waste handling System
 - Areas of manifest needed for completion by generator.
 - Discrepancy requirements/mailling procedures.
 - Recordkeeping (retention)
5. Hazardous/Characteristics of wastes
 - Definition of corrosive, oxidizer, flammables, incompatibility, storage for compatibility on truck.
6. Personal Protection Equipment
 - Hard hat, rubber gloves, rain gear (rubber), rubber boots, face mask, safety goggles, safety glasses.

FUNCTION:

Hazardous Waste Coordinator

Canadian Shipments/Domestic Non-routine shipments

DUTY:

Have unknown wastes analyzed
Prepare TSDF documentation

TABLE 8.4 (continued)
LIMITED TRAINING

MACDERMID, INC.
WATERBURY, CONNECTICUT

ELEMENT:

- If wastes "unknown", sends to independent lab for analysis
- Prepares waste profile for TSDFs for quotation
- Assures correct packaging and shipping information for labels/paperwork
- Arranges manifest documentation and shipping arrangements
- Canadian shipments - Annual report to U.S. and Canadian EPA for acceptance
- Prepares Canadian and U.S. manifest documentation
- Arranges transportation
- Requests written audits from potential TSDFs and requests and keeps files on potential and current waste transporters (Permits and Certificate of Insurance)
- Establishes procedures for other waste handlers and coordinates their activities by making sure their on-the-job training information is up-to-date with the latest regulations

EDUCATION:

Should have at least 2 to 4 years college with some chemical background education. Must be able to read/write English. Must have DOT/EPA knowledge.

TRAINING:

1. OSHA 29 CFR 1910.1200
 - Employee's rights
 - Location of MSDS
 - How to read an MSDS.
 - Labelling information
2. OSHA 29 CFR 1910.120
3. Outside seminars where applicable in EPA/DOT
4. Use of consultants and written regulations
 - Review Federal Register, publications received from consultants,
 - Call EPA Hot-Line, if any questions.

TABLE 8.4 (continued)
LIMITED TRAINING

MACDERMID, INC.
WATERBURY, CONNECTICUT

5. Hazardous/characteristics of wastes

- Definition of corrosive, oxidizer, flammables, incompatibility, storage for compatibility on truck.

FUNCTION:	QC Manager (Manufacturing)
DUTY:	Wastes analysis
TASK:	Fingerprint analysis
EDUCATION:	Read/speak/write English, degree in chemistry - BS minimum preferred

TRAINING:	<ol style="list-style-type: none">1. <u>OSHA 29 CFR 1910.1200</u><ul style="list-style-type: none">•Employee's rights•Location of MSDS•How to read an MSDS.•Labelling information2. <u>OSHA 29 CFR 1910.120</u>3. <u>Hazardous/characteristics of wastes</u><ul style="list-style-type: none">• Definition of corrosive, oxidizer, flammables, incompatibility, storage for compatibility on truck.
-----------	--

FUNCTION:	Group Leader: Shipping/Receiving Department
DUTY:	Ship/Receive Hazardous Wastes
TASK:	<ul style="list-style-type: none">• Supervise personnel in off-loading waste from carriers and transporting to QC area.• Transporting wastes from berm to ship/receive area and load carriers.
ELEMENT:	<ul style="list-style-type: none">• Sign incoming waste manifests along with discrepancy checklist - see attached, for each received waste - kept on file with manifests.• Group Leader supervises personnel to do above.

TABLE 8.4 (continued)
LIMITED TRAINING

MACDERMID, INC.
WATERBURY, CONNECTICUT

EDUCATION: Prefer a High School background, read/write/speak English.
Forklift operation.

- TRAINING:
1. OSHA 29 CFR 1910.120 (24 hour)
 2. OSHA 29 CFR 1910.1200
 - Employee's rights
 - Location of MSDS
 - How to read an MSDS.
 - Labelling information
 3. Forklift Operations
 - Daily inspection for fluid levels, leaks, brake, chain failure.
 - Know equipment capacity of truck and weight of what is picked-up.
 - Back down a ramp when carrying a load.
 - Aware truck can flip easily.
 - When leaving truck, turn off completely and set hand brake, Lower forks to ground.
 4. Hazardous/Characteristics of wastes
 - Definition of corrosive, oxidizer, flammables, incompatibility, storage for compatibility on truck.
 5. Personal Protection Equipment
 - Hard hat, rubber gloves, rain gear (rubber), rubber boots, face mask, safety goggles, safety glasses.

TABLE 8.4 (continued)
LIMITED TRAINING

MACDERMID, INC.
WATERBURY, CONNECTICUT

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TABLE 8.5

BROAD TRAINING

MACDERMID, INC.
WATERBURY, CONNECTICUT

1. COMPLIANCE ADMINISTRATOR - CHERRIE D. GILLIS

Job Description

- a. Responsible for implementation of the Hazardous Waste Management Program at the facility. Must know the compliance requirements and procedures required by the Connecticut DEP and EPA.
- b. Assures the proper identification of hazardous wastes generated at the facility.
- c. Establishes procedures to monitor the disposition of hazardous wastes from generation to ultimate disposal and monitors these activities as necessary.
- d. Assures that containers are properly handled, packaged and labelled.
- e. Selects approved transport and disposal contractors and sites.
- f. Prepares and signs manifest papers when applicable.
- g. Coordinates reporting activities to regulatory agencies.
- h. Collects and maintains records in accordance with recordkeeping requirements.
- i. Coordinates personnel training activities.
- j. Conducts limited classroom waste training for specific personnel who handle wastes when review of regulations, manifest/waste labelling system, separation and compatibility of chemicals plus 29 CFR 1910.1200.
- k. Must know the appropriate information required to notify regulatory agencies, and the internal procedures for notifying regulatory agencies.
- l. Must know the liabilities for failure to properly notify or respond to an emergency.

TABLE 8.5 (continued)

BROAD TRAINING

MACDERMID, INC.
WATERBURY, CONNECTICUT

Training Requirements

The Compliance Administrator will be trained by reviewing regulatory requirements, attending seminars, use of outside consultants and by on-the-job experience. The training requirements for this position include:

- a. Must have read and be familiar with facility compliance requirements, (including state and federal hazardous waste regulations) procedures, and plans before assuming this function.

Review Federal Register; attend seminars; review publications published by consultants, EPA/DEP, private companies, etc.

- b. May participate in the training program given to facility personnel involved in hazardous waste management.
- c. Knowledge of hazardous/characteristics of wastes on-site.

Review waste analysis reports, meet with Research Personnel to discuss process developing wastes.

- d. Must have been trained in a course on Hazardous Waste Management.

2. FACILITY EMERGENCY RESPONSE COORDINATORS - JOHN MIELE
ALTERNATES: BILL SCHWEIKER
BOB ARDZIJAUSKAS

Job Description

- a. Designated authority
- b. In the event of an emergency, responsible for immediate implementation and coordination of all notification and emergency response procedures as designated in the Contingency Plan.
- c. Must know how to identify and assess an emergency condition, and under what conditions to notify local authorities.
- d. Must know how to activate appropriate alarms, evacuate personnel if necessary, and notify local authorities.

TABLE 8.5 (continued).

BROAD TRAINING

MACDERMID, INC.
WATERBURY, CONNECTICUT

- e. Must know what arrangements have been made with local authorities.
 - f. Must know facility personnel to contact to initiate emergency response procedures.
 - g. Must know the appropriate emergency response procedures to implement and how to locate and use the emergency response equipment.
 - h. Must know the appropriate information required to notify regulatory agencies, and the internal procedures for notifying regulatory agencies.
-
- i. Must know the liabilities for failure to properly notify or respond to an emergency.
 - j. Decision as to call outside authorities for assistance.
 - k. Decision as to evacuation.

Training Requirements

- a. Will be trained by reviewing regulatory requirements, (including State and federal hazardous waste regulations) attending seminars, use of outside consultants and on the job experience.
- b. Must have read and be familiar with the information and procedures contained in the Contingency Plan.

Working knowledge of where waste and virgin materials are stored; chemical and physical hazards of these wastes; evacuation procedures; location of emergency equipment.
- c. Must be trained in the notification procedures in the Contingency Plan, including conditions requiring notification, timing of notification, personnel to notify, local authorities to notify, notification information required, and recording notification events.

TABLE 8.5 (continued)

BROAD TRAINING

MACDERMID, INC.
WATERBURY, CONNECTICUT

- d. Must be trained in emergency response procedures identified in the Contingency Plan, including location and use of all emergency response equipment, coordination with local authorities, containment procedures, remedial procedures, and storage and disposal of recovered materials.
- e. Must be trained in personnel utilization in emergency response activities, including types of personnel to be utilized in emergency response situations, the nature and extent of their duties, and prior training required for proper performance of those duties.
- f. Must have OSHA 29 CFR 1910.120 (24 hour) training.
- g. Fork lift training, as applicable.
 - Daily inspection for fluid levels, leaks, brake, chain failure.
 - Know equipment capacity of truck and weight of what is picked-up.
 - Back down a ramp when carrying a load.
 - Aware truck can flip easily.
 - When leaving truck, turn off completely and set hand brake, Lower forks to ground.
- h. Training on-the-job, in-house seminar when available, reviewing regulatory requirements, use of outside consultants.
- i. Knowledge of hazardous/characteristics of wastes on-site.

Definition of corrosive, oxidizer, flammables, incompatibility, storage for compatibility on truck.
- j. Knowledge of personal protection equipment.

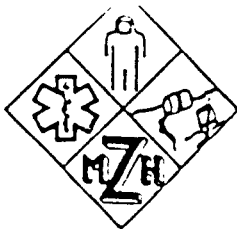
Location of equipment, type of equipment, equipment capabilities.

APPENDIX Y

LIST OF PERSONNEL WHO ATTENDED THE
24-HOUR TRAINING PROGRAM (29 CFR 1910.120)
AND QUALIFICATIONS OF THE INSTRUCTOR

HRP

ASSOCIATES, INC.



MICHAEL H. ZISKIN CONSULTING, INC.

20 Magee Avenue, Stamford, Connecticut 06902
203-964-9199

received
4-3-90

March 29, 1990

Mr. Frank J. Cruice, M.S.
MacDermid, Incorporated
245 Freight Street
Waterbury, CT 06702

Dear Mr. Cruice:

This letter certifies that the following individuals have successfully completed the 24-hour "Hazardous Waste Operations and Emergency Response Course" held February 19-20-21, 1990, in Waterbury, Connecticut. This training is consistent with the OSHA requirements as set forth in 29CFR, Part 1910.120.

Bob Ardziejauskas
Bob Neuman
Dave Fortier
Kurt J. Ritucci
Dave Howell
John Miele
Bill Schweikher
Kenneth S. Riblon
Nino Mattei Jr.

Fremont B. Brown
Jonathon F. Alperin
Ralph Tardy
Rick Daley
Paul Maloney
Adla D.S. Reddy
Frank J. Cruice
Max DiMarco
Luis Arce

Sincerely,

Michael H. Ziskin, CHCM, CHMM
President

MHZ/no



MICHAEL H. ZISKIN CONSULTING, INC.

20 Megee Avenue, Stamford, Connecticut 06902
203-964-9199

PROFESSIONAL QUALIFICATIONS

Michael H. Ziskin Consulting, Inc. (MHZCI), located in Stamford, Connecticut, is a private multi-disciplinary environmental and occupational health and safety consulting firm providing turnkey services in the areas of Corporate Program Development, Management and Employee Training, Field Services, and Protective Equipment Evaluations.

Partial listing of clients for whom professional services have been provided:

Atlantic Environmental Consultants
C.A. Rich Consultants
Carrier (UTC Carrier)
Commission on Fire Prevention - State of Connecticut
Converse Consultants East
Dames and Moore
Eichelberger Well Drilling
ENSR Consulting and Engineering
ERM-Northeast
Envirotrol, Inc.
Environmental Waste Resources (EWR)
Excavation Technologies
Fred C. Hart Environmental Management
Fuji Photo Film USA, Inc.
General Electric Corporation
GeoEnvironmental Consultants, Inc.
Hamden Fire Department - Connecticut
Hardin-Huber Well Drilling
Hudson Fire Department - Massachusetts
International Business Machines (IBM)
Interim Dewatering Services, Inc.
Leggette, Brashears & Graham
Lewis Excavating
Loctite Corporation
Massachusetts Fire Academy
Monsanto
Montgomery County HIRT
National Oil
National Water Well Association
New Jersey Department of Labor
New York State Dept. of Environmental Conservations
New York State Power Authority
Northeast Utilities
Princeton Plasma Physics Laboratory
Recon Drilling Company
Ridgefield Fire Department - Connecticut
R.E. Wright and Associates

Rocky Hill Fire Department - Connecticut
S & D Engineering Services, Inc.
Sargent Construction Corporation
Sealand
Soil Mechanics Drilling Corporation
S.S. Papadopoulos
Suffolk County Police Department HIRT
Turn of River Fire Department - Connecticut
U.S. Army - New Cumberland Army Depot, Pennsylvania
U.S. Army - Picatinny Arsenal, New Jersey
U.S. Coast Guard - Groton, CT
U.S. Navy - Groton Submarine Base - Connecticut
Westchester County HIRT
York Wastewater Consultants, Inc.

mzqual
10/89

RÉSUMÉ
MICHAEL H. ZISKIN
PRESIDENT

SUMMARY OF QUALIFICATIONS

- Founder, President and Owner of Field Safety Corporation and Michael H. Ziskin Consulting, Inc., companies that provide consulting, training, equipment, and services to the occupational and environmental, health, safety, and hazardous materials markets.
- 14 years experience in planning, conducting, and supervising of major projects in occupational and environmental health and safety, air pollution assessment, hazardous waste site investigations, program development, and compliance training.
- Member of NFPA and ASTM F23 committees addressing chemical protective clothing.
- Conducts training sessions for management and operations personnel in the industrial, governmental, and military areas.
- Academic background in environmental health and industrial hygiene with additional training from EPA and NIOSH; certified at master levels as a Hazardous Materials Manager and Hazard Control Manager.
- Knowledgeable and experienced in the following areas:
 - Corporate industrial hygiene and safety programs
 - Corporate health and safety manuals
 - Environmental and occupational health studies
 - Industrial hygiene inspections and evaluations
 - Site specific health and safety manuals
 - Air pollution assessments
 - Hazardous waste site investigations
 - Remedial actions
 - Emergency response

PROFESSIONAL EXPERIENCE

FIELD SAFETY CORPORATION /
MICHAEL H. ZISKIN CONSULTING, INC.
President / Owner

Stamford, CT
1983 - Present

Responsible for company policies and implementation of research, education, outfitting, and services to industry professionals involved with hazardous materials.

- Perform occupational health and safety management consultations involving program development, compliance audits, and risk assessments.
- Develop health and safety programs and standard operating procedures including respiratory protection; hazard communication, and confined space entry.
- Provide health and safety planning, hazardous waste site supervision, and industrial hygiene monitoring.
- Outfit personnel with protective equipment, air monitoring systems, and spill control products.
- Research and develop quantitative test method for vapor flash protection and for assessing physical integrity of chemical protective clothing ensembles.
- Maintain service contracts for integrity testing and routine maintenance of encapsulating suits.
- Conduct seminars and hands on training for OSHA / EPA compliance. Conduct advanced training on chemical protective clothing, confined space entry, chemical identification, hazardous waste operations, emergency response, and respiratory protection.

Accomplishments:

- Delivered more than five thousand hours of training to hazardous waste site operators and emergency responders.
- Conducted in-depth technical advice to health and safety professionals throughout the U.S.
- Appointed to the NFPA Subcommittee on Chemical Protective Clothing. Committee has since authored three national documentation standards - 1991, 1992 and 1993.
- Designated round robin test participant for ASTM F 23 Committee on Protective Clothing. Round robin tests are being conducted to standardize methodology for encapsulating suit evaluations.
- Developed quantitative test method to assess the physical integrity of chemical protective clothing ensembles.
- Developed new performance test for vapor flash protection now being presented to ASTM F23 Committee for adoption as a nationally recognized test method.
- Created personal protection equipment use strategies for over 500 hazardous site operations and emergency response organizations.
- Produced new educational methods and procedures while training health and safety professionals in areas of chemical handling, confined space entry, chemical protective clothing, and respiratory protection.
- Major contributor in re-design of total encapsulating chemical protective suits which incorporated specific safety and comfort benefits to the emergency responder.
- Established first mobile test unit in U.S. to provide quantitative respiratory fit testing and encapsulating suit inward leakage testing.

Major Projects:

- Provided health and safety management consulting and training to major Northeastern U.S. utility company. Program included industrial hygiene, safety, environmental, and front line management services.
- Established health and safety management structure and program for national environmental testing laboratory and consulting engineering firm.
- Managed field operations, directed staff of eight, and assisted in the coordination of excavation and environmental sampling activities during a three and a half year clean up of a Superfund site (first voluntary cleanup under CERCLA in the U.S.).
- Provided health and safety services for environmental engineering firm investigating a client's hazardous waste site under a petroleum refinery storage tank farm. Services included health and safety planning, site supervision, air monitoring, outfitting personnel, and providing support facilities for site owner.
- Designed and delivered spill response and control system for an international photochemical company which was implemented throughout their U.S. distribution system. Project included chemical compatibility testing, control product selection, outfitting of equipment, training, program development, and service contracting.

S & D ENGINEERING SERVICES, INC.
Senior Staff Consultant

Metuchen, NJ
1983 - 1984

Provided hazard control consulting services to New Jersey Department of Environmental Protection, private, industrial and municipal fire departments, and other organizations engaged in hazardous material response operations.

- Managed industrial hygiene and safety programs, hazardous waste site investigations and clean-ups, environmental health assessments, air monitoring studies, and health and safety training programs.
- Organized and conducted hazardous waste training programs.
- Provided remedial investigatory services at more than 5 major sites in Northeast U.S.

DAMES & MOORE (1979 - 1983)
Corporate Industrial Hygiene and Safety Director

White Plains, NY
1981 - 1983

Responsible for developing and directing company health and safety programs for 23 waste management service locations nationwide.

- Provided health and safety project management for more than 80 waste management field investigations and remedial operations.
- Developed more than 250 health and safety plans for hazardous waste site operations.
- Trained over 300 personnel in health and safety aspects of site operations.

Project Manager

1980 - 1981

- Managed corporate medical surveillance, respiratory protection, and trained over 450 employees.
- Managed environmental health assessment projects involving air quality studies, odor measurements, stack emission characterizations, public health surveys, and expert testimony.

Principal Investigator

1979

- Participated in many environmental studies at uncontrolled hazardous waste sites and industrial facilities.
- Conducted mass balance and pollution control studies at a low-level radioactive waste treatment facility.
- Task Group Leader for low level radioactive burial site environmental assessment involving proposed NRC regulation.

YORK RESEARCH CORPORATION
Project Director

Stamford, CT
1976 - 1979

Directed numerous air pollution studies at steel, utility, chemical, and research facilities. These studies involved U.S. EPA research, compliance testing, performance evaluations, and point source characterizations.

- Managed staff up to 10 and budgets of \$30,000 - \$500,000 for projects of up to 3 months duration.

WESTCHESTER COUNTY DEPARTMENT OF NATURAL RESOURCES PLANNING

White Plains, NY

1975 - 1976

Specialist

Responsible for environmental land use planning studies, natural resource inventories, and environmental impact statements.

- Conducted environmental impact analysis for proposed county activities.
- Developed a local citizen advisory council for each municipality in West Chester County.

PRESENTATIONS

"Personal Protection - A False Sense of Security and Liability?". Presented at The Northeast Waste Management Exposition, Hartford, CT, 1989.

"Chemical Protective Clothing - Standards, Trends and Training". Presented at the Environmental Hazards Management Conference, Hartford, CT, 1989.

"Encapsulating Suits - Inspection, Maintenance and Testing". Presented at a Hands On Workshop at The National Hazardous Response Team Conference, Bethesda, MD, 1989.

"Considerations for Decision Makers Selecting Chemical Protective Clothing". Presented at the International Symposium on Protective Clothing: Chemical Protective Clothing Performance in Chemical Emergency Response, Sponsored by ASTM Committee F-23, San Diego, CA, 1989.

"Decision Logic for Selecting Multi-Layer Ensembles". Presented at Clemson University's Second Annual Conference on Protective Clothing, College Park, GA, 1988.

"Testing Total Encapsulating Critical Protective Suits". Presented at a Hands on Workshop at the National Hazardous Materials Response Team Conference, Bethesda, MD, 1988.

"The Role of Thermal Protection In Multi-Layered Ensembles". Presented At the Second International Symposium of the Performance of Protective Clothing, ASTM F23, Sponsors - AIHA and Royal Institute of Technology, Tampa, FL, 1987.

"Safety Procedures On Hazardous Waste Sites". Presented at the New Jersey Water Well Association Seminar Program, Atlantic City, NJ, 1983.

"Hazardous Material Incidents: Overcoming Management and Training Problems". Presented At The Spill Control and Hazardous Materials Conference, New Haven, CT, 1983.

"Investigating Hazardous Waste Sites - Safely". Presented at the 84th American Chemical Society National Meeting - Health and Safety Concerns at Uncontrolled Chemical Waste Sites Symposium, Kansas City, MO, 1982.

EDUCATION

POLYTECHNIC INSTITUTE OF NEW YORK
Master of Science pending; Environmental Health Science

Brooklyn, NY
1978 - 1985

COLUMBIA UNIVERSITY
Environmental Systems Analysis

New York, NY
1976

LONG ISLAND UNIVERSITY, SOUTHAMPTON COLLEGE
Bachelor of Arts; Environmental Land Use Planning

Southampton, NY
1975

CERTIFICATIONS

Certified Hazardous Materials Manager (No. 336) Master Level (IHMM)
Certified Hazardous Control Manager (No. 1648) Master Level (BHCM)
Certified Hazardous Materials Technician (IECA)
Certified HAZ CAT Trainer (HAZTECH, INC)

ADDITIONAL TRAINING

Chemical Identification System - HAZTECH, INC.	1989
Quantitative Fit Testing, ATI	1989
Emergency Control of Hazardous Materials Incident, I & II, New York State Fire Academy	1986
Response Safety Decision Making, EPA	1985
Hazardous Material Incident Response Operations, EPA	1982
Groundwater Investigation at Hazardous Waste Sites, National Water Well Association	1982
Occupational Respiratory Protection, NIOSH	1981
Visible Emissions Measurements, Connecticut Department of Environmental Protection	1979

PROFESSIONAL AFFILIATIONS

Member, ASTM F23 Committee on Chemical Protective Clothing Standards
Member, National Environmental Training Association
Member, Air and Waste Management Association
Member, National Association of Environmental Professionals
Member, National Fire Protection Association
Member, NFPA Sub-Committee on Chemical Protective Clothing
Full Member, American Industrial Hygiene Association
Member, Connecticut Forum for Environmentally Regulated Professionals
Diplomat, Academy of Hazardous Materials Management

ATTACHMENT E

INSPECTION PLAN

Attachment E

Hazardous Waste Inspection Plan

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7.0 HAZARDOUS WASTE INSPECTION PLAN (CFR 40, Sections 264.15 and 264.170-264.194)

7.1 Introduction

Under Section 264.15 of the code of Federal Hazardous Waste Regulations (CFR 40) and State of Connecticut Statutes, the owner or operator must fulfill the following general inspection requirements:

- inspect his facility for malfunctions and deterioration, operator errors, and discharges which may cause release of hazardous waste or pose a threat to human health.
- conduct these inspections often enough to identify problems in time to correct them before they harm human health or the environment.
- develop and follow a written inspection schedule which must be kept at the facility. This inspection schedule must identify the types of problems which must be looked for.
- inspect monitoring equipment, storage tanks, containers, treatment units, loading, unloading areas, safety and emergency equipment, security devices and operating and structural equipment.
- remedy any deterioration or malfunction that the inspection reveals and take remedial action where an incident is revealed.
- record all inspections, including date and time of inspection, name of inspector, notation of observations made and the date and nature of any repairs made and keep these records for a three year period.

7.2 Specific Procedures

Specific procedures for areas of inspection and frequency are included on Table 7.1.

Remedial actions will be noted on the Inspection Log Sheets and maintained in the Operating Record for a minimum of three years. In case of a spill, fire or explosion, the following procedures are to be followed.

TABLE 7.1
INSPECTION SCHEDULE

<u>Area/ Equipment</u>	<u>Specific Item</u>	<u>Types of Problems</u>	<u>Frequency of Inspection</u>
Safety & Emergency Equipment	Absorbent Material	Out of Stock	Monthly
	Emergency Shower/Eye- wash	Water pressure, leaking, drainage	Monthly
	Goggles and Protective Glasses	Broken or dirty equip- ment	Monthly
	Rubber Gloves	Out of Stock	Monthly
	First Aid Equipment and Supplies	Out of Stock or inopera- tive	Monthly
	Telephone/Paging Sys- tem/Beepers	Power Loss, Voice Test or Signal	Monthly
	Fire Extinguishers	Needs Recharging	Monthly/After Each Use
	Respirators/ Cartridges	Out of Stock	Monthly/After Each Use
	Chemical Suits	Out of Stock/Wear and Tear	Monthly/After Each Use
	Shovels	Condition/Out of Stock	Monthly
	Scott Air Pack	Air delivery system, Air quantity in reserve	Monthly
	Walkie-Talkies	Power, Voice Test	Monthly/Prior to Use
	Fire Alarm System	Power failure, Audible Alarm	Monthly
	Sprinkler System	Loss of water pressure, signal to security service	Monthly
	High Level Alarms	Signal to ADT, Audible Alarm	Monthly
Container Storage and Handling Areas	Water and air pumps	Power, clogging	Monthly/After Each Use
	Container Placement and Stacking	Aisle space, height of stacks	Weekly
	Sealing of Container	Open lids, torn lining	Weekly
	Labelling of Container	Improper identification, date missing	Weekly
	Containers	Corrosion, leakage, structural defects	Weekly
	Pallets	Damaged (e.g. broken wood, warping)	Weekly
	Base & Foundation of Container Storage Area	Cracks, Spalling, uneven settlement, erosion, wet spots	Weekly
	Curbing for Container Storage Area	Cracks, deterioration	Weekly
	Storage Area Racks in good condition	Leaks, spills Sagging, swaying	Daily Weekly

TABLE 7.1 (continued)

INSPECTION SCHEDULE

<u>Area/ Equipment</u>	<u>Specific Item</u>	<u>Types of Problems</u>	<u>Frequency of Inspection</u>
	Storage Pallets*	3rd level and above strapped	Weekly
	Racks*	Drum inspection for leaks, etc., row B01, B02, B03, B04, B05, level 1-5	Weekly
	High Level Alarm*	Working Order	Weekly
* Apply to the main container storage area only.			
Waste Storage Tank Area/Recycling Area	Level	Tank filled to capacity, unexpected volume loss	Daily Record must be kept of level and gains and losses.
	Area Around Tank	Spotting indicating leaks	Daily
	Fittings	Leaks, corrosion, deteri- oration	Weekly
	Base & Foundation	Cracks, spalling, uneven settlement, erosion, wet spots sealant, deteriora- tion	Daily
	Pipes	Leaks, corrosion, deteri- oration	Weekly
	Valves	Loss of metal thickness, leaks, corrosion	Weekly
	Warning Signs	Damaged, missing	Weekly
	Level Gages	Working Order	Weekly
	Drainage System	Clean/tree, evidence of spilled material	Daily
	Concrete Block Wall	Cracks, sealant deteriora- tion	Daily
	Tank Shell	Cracks, corrosion, dis- coloration, bulges, buck- les	Daily
	High Level Alarm	Working Order	Weekly
Metal Hydroxide/Sulfide Sludge Storage Area	Base & foundation (including sealer)	Cracks, spalling, uneven settlement, erosion, wet spots	Weekly
	Sludge press air pres- sure gauge pipes/valves/fittings	Loss of metal thickness, leaks, corrosion, deteri- oration	Weekly
	26 yd ³ roll-off container	Liner in place, sludge free of liquid	Weekly

TABLE 7.1 (continued)

INSPECTION SCHEDULE

<u>Area/ Equipment</u>	<u>Specific Item</u>	<u>Types of Problems</u>	<u>Frequency of Inspection</u>
Bulk Loading/Unloading Area	Warning light shut off for overflow - sludge holding tank	Light in good working condition	Weekly
	Mobile Drainage System catch access H ₂ O from press	Clear/free	Weekly
	Filter press: material should be caked	Condition	Weekly
	Sludge holding tanks	Leaks, valves	Weekly
	Warning Signs	Damaged, missing	Weekly
	Valves/fittings/pipes	loss of metal thickness;- leaks, corrosion, deterio- ration	Weekly
	Dike	Cracks, deterioration	Weekly
Security Devices	Level gauges	Working order	Weekly
	Base & Foundation	Cracks, spalling, uneven settlement, erosion	Weekly
	Drainage System	Sump drains - clear/free evidence of spilled mate- rial	Weekly
	Cinder block wall	Cracks, sealant deterio- ration	Weekly
	Loading/Unloading Area	Spills	Daily
	Facility Fence	Corrosion, damage to Chain-link fence	Weekly
	Gate	Corrosion, damage to Chain-link fence	Weekly
East Aurora Street and Main Container Storage Area Loading/Unloading Docks	Warning Signs	Damaged, missing	Weekly
	Warning Signs	Damaged, missing	Weekly
	Base & Foundation	Cracks, spalling, uneven settlement, erosion	Weekly
	Loading/Unloading Area	Spills	Daily

First, the Emergency Coordinator, or his alternate, would be contacted immediately. The Emergency Coordinator will then carry out the Contingency Plan agreed to by local organizations (police and fire departments, hospitals, etc.).

A spill, fire or explosion would be controlled or contained from spreading (if possible) without any further risk or danger to plant personnel.

The names and the phone numbers of the Emergency Coordinator and his designated alternate are listed in the Contingency Plan, for MacDermid, Inc. in Section 10.0.

7.3 Notification

The Connecticut Environmental Protection Agency, the Waterbury Fire Department, and the Waterbury Health Department will be notified by phone, followed by a written report if any of the following occur:

- 1) Release of hazardous wastes.
- 2) Fires involving hazardous wastes.
- 3) Explosions involving hazardous wastes.
- 4) Ground water contamination resulting from hazardous waste incidents.

If the substance released is a CERCLA hazardous substance and the release equals or exceeds its Reportable Quantity (RQ), the National Response Center will be notified.

If the substance released is a CERCLA hazardous substance or a SARA Title III extremely hazardous substance, and the release equals or exceeds the RQ and leaves the facility boundary, the LEPC will be notified.

If the released substance reaches a navigable waterway, the Coast Guard will be notified.

7.4 Inspection Schedule

This section will delineate the equipment and structures at the facility which require routine inspections. A summary of the areas of inspection and inspection frequency are provided on Table 7.1.

7.4.1 Containment Areas

The storage containment areas consisting of concrete floor surfaces and berms will be visually inspected weekly for signs of structural defects (i.e. cracks, damage, erosion, etc.).

7.4.2 Site Security

At the close of each operating day, all entry gates to the facility will be checked to ensure they are locked. All doors to the facility will be checked to ensure that they are locked.

7.4.3 Areas Subject to Spills

All areas which may be subject to spills will be inspected at least once each operating day for signs of spillage or leakage. These areas include the loading/unloading areas. The results of each such inspection will be entered into the Operating Record.

7.4.4 Containers [40 CFR Sections 264.15(a) and 264.174]

At least weekly, the drums in the container storage and container handling areas will be inspected for leaks, signs of corrosion, deterioration, pitting, bulging, and to ensure that each container is securely closed. Adequate aisle space will be provided in the container storage area to allow for a thorough inspection of each drum in storage. During these inspections, each drum will be visually inspected. In addition, the storage and handling containment area consisting of all concrete floor surfaces and containment berms will be visually inspected for evidence of spills, leaks, and structural defects (cracks, erosion,

pitting, etc.). The results of each inspection and the nature of any repairs will be entered into the Operating Record.

7.4.5 Storage Tanks

This section will delineate the tanks and related structures which require routine inspections at the facility.

7.4.5.1 Tank Level [40CFR §264.194(a1-3)]

At least once each operating day, the level in each tank will be either measured, or verified from previous readings if no deliveries or discharges have been made to or from the particular tank. The tank levels will be recorded in the Operating Record.

This log of tank levels will be utilized prior to the acceptance or transfer of additional material to verify adequate capacity in the tank for said acceptance. This will preclude the possibility of overfilling the tanks.

7.4.5.2 Construction Materials [40 CFR §264.194(a4)]

At least once each week, the exterior of each tank will be visually inspected to detect corrosion, erosion, cracks and leakage from seams and fixtures. The results of each inspection will be entered into the Operating Record.

7.4.6 Loading/Unloading Areas

The container and bulk loading and unloading areas at least once each operating day will be inspected for signs of

spillage. The dikes, base, foundation, and warning signs of the loading and unloading areas will be visually inspected for evidence of cracks, spalling, deterioration and damage on a weekly basis. The results of each inspection and the nature of any repairs will be entered into the Operating Record.

7.4.7 Emergency Equipment Inspection [40 CFR Section 264.15(b)]

This section will address the frequency and type of inspections to be conducted with regard to communication and alarm systems, fire extinguishing equipment, safety equipment and spill control equipment.

7.4.7.1 Fire Extinguishing Equipment

- (1) At least once each month, all portable fire extinguishers on-site will be visually inspected in accordance with OSHA Standard 29 CFR 1910.157(E)(2), and NFPA Standard 10 entitled, "Standard for Portable Fire Extinguishers", Section 4-3 by MacDermid, Inc. These monthly inspections will determine: if all extinguishers are in their designated places; if each such extinguisher is clearly visible; if the operating instructions on each extinguisher are legible; if any seals or tamper indicators are broken or missing; if any signs of physical damage, corrosion, leakage, or clogged

nozzles are obvious; and if pressure gauge readings are in operating ranges.

- (2) At least annually, each portable fire extinguisher will be subjected to an annual maintenance check in accordance with OSHA Standard 29 CFR 1910.157(e)(3), and NFPA Standard 10, Section 4-4. Each extinguisher will be hydrostatically tested in accordance with the schedule set forth in 29 CFR 1910.157(f), Table L-1 and/or NFPA Standard 10, Table 5-3. The annual inspection, at present, is performed by Waterbury Fire Extinguisher Company in Waterbury, Connecticut. Copies of these annual inspections are maintained as part of the operating record. A copy of their qualifications is provided in Appendix L.

7.4.7.2 Protective Equipment

At least once each month, all protective equipment maintained on-site (protective glasses, gloves, respirators, etc.) will be inventoried and checked for full operational status. Communications and alarm systems will be inspected and tested for proper functioning. (Refer to the Operating Record.)

7.4.7.3 Spill Clean-Up Equipment

At least once each month, all spill clean-up equipment (shovels, absorbent, etc.) will be inventoried and checked for operational status.

The results of each such inspection in this section will be entered into the Operating Record.

7.4.7.4 Communication System

The communication systems employed at MacDermid, Inc. include telephones, telephone paging system, beepers and walkie-talkies. The telephones, telephone paging system and beepers are used daily by MacDermid. Therefore, any operational problems associated with these communication devices will be detected that same day. The walkie-talkies are used at MacDermid for non-routine tasks such as inspecting outside raw material storage tanks. Therefore, the walkie-talkies as specified in Table 7.1 will be inspected at least monthly.

7.4.7.5 Fire/Sprinkler Systems

The pull-boxes located throughout the Huntingdon Avenue facility will activate an internal audible fire alarm only. This alarm system will be tested monthly. The sprinkler system when activated will contact the security company ADT, who will notify

an Investigator. The sprinkler system is tested monthly by ADT for water pressure and signal to the off-site ADT office.

7.5 Preventative Maintenance [40 CFR Section 264.15(a)]

As stated in the Introduction to this Plan, its purpose is to establish an inspection routine to detect malfunctions, deterioration, leaks and discharges. This Plan shall not be used as a substitute for a routine preventative maintenance plan for facility equipment required to maintain the facility in top operational condition.

7.6 Containment Area Accumulation

If subsequent to inspections, or if at any other time, it is observed that liquids have accumulated in any of the secondary containment areas, the situation will be handled as follows:

- a) If the exact source of the leaked or spilled material can readily be determined, the material will be identified accordingly, and transferred to an appropriate container.
- b) If the source or identity of the spill cannot be determined, a sample will be collected and analyzed to see if it exhibits any of the four characteristics of a hazardous waste (ignitability, corrosivity, reactivity or EP toxicity), or to see if it contains any of the hazardous constituents (40 CFR 261, Appendix VII) of any listed wastes stored in the particular containment area. Test methods will be as described in Section (1) ONE of Attachment A - the facility waste analysis plan.

In either case (a) or (b) above, any accumulated liquids in secondary containment areas will be removed as soon as possible to preclude any possibility of overflow.

7.7 Surface Impoundments Inspection [40 CFR Section 264.226]

Not applicable to Mac Dermid, Inc.

7.8 Waste Pile Inspection [40 CFR Sections 264.253 and 264.254]

Not applicable to MacDermid, Inc.

7.9 Landfill Inspection [40 CFR Section 264.303]

Not applicable to MacDermid, Inc.

7.10 Incinerator Inspection [40 CFR Section 264.347]

Not applicable to MacDermid, Inc.

7.11 Recordkeeping [40 CFR Sections 264.15(b) and (d)]

Hazardous waste storage facility inspection records of MacDermid, Inc. will be kept on-site for three years from the date of inspection. These records will include the date and time of the inspection, the name of the inspector, the type of problem found, and the date and type of any repair performed.

All inspection records must be periodically updated and entered into a Facility Operating Record.

Sample inspection record logs are provided in Appendix A of this attachment.

APPENDIX A
INSPECTION LOGS

Records Shall Be Retained 5 Years

Huntingdon Avenue Security Fence and Gates

Monthly Inspection Log By _____ Maintenance Manager

Visual Inspection To Include:

- Entire perimeter fence
 - Gates/Locks
 - Flammability Rack
 - Soil erosion towards storm sewers
 - Tank Farm Berm
 - Tank Farm back-in area
 - Catch Basins
1. Integrity for corrosion
 2. Hinge/lock operation
 3. Unnecessary openings
 4. Soil erosion
 5. Flammability rack integrity
 6. Signs of leaks/spills
 7. Tank Farm Berm - Berm Integrity, cracks, etc.
 8. Tank Farm back-in area - Integrity as cracks, broken cement

DATE/ TIME	PROBLEMS OBSERVED (Specify Location)	REMEDIAL ACTION TO BE TAKEN BY WHOM & WHEN?	DATE COMPLETED	TIME	INITIALS
Jan:					
Feb:					
Mar:					
Apr:					
May:					
Jun:					
Jul:					
Aug:					
Sep:					
Oct:					
Nov:					
Dec:					

3/90

RCRA/CR WASTES ONLY

OK = ✓ Problem = X*

[illegible]

*State problem and how rectified and date.

- Tank Storage -

*WHEN MACDERMID TRANSIPS,
WE ACT AS NEW GENERATOR

41930 = Cu Etchant D-002

[illegible]

TANK: _____ Volume in Gallon

TANK: _____ Volume in Gallon

[illegible]

Satellite Areas

OK = Problem = X*

[illegible]

- *State problem and how rectified and date.

[illegible]

FLAMMABLE BERM - PILOT
WEEKLY

CONTAINER STORAGE AREA INSPECTION LOG SHEET - FLAMMABLE LIQUID STORAGE WASTES

ACCEPTABLE: Y = Yes
N = No

IACDERMID: _____

Department: _____

INSPECTOR'S INITIALS*

	* DATE: TIME:	* DATE: TIME:	* DATE: TIME:	* DATE: TIME:	* DATE: TIME:	COMMENTS
Stack - 2 High - Sagging, Sway						
Sealing of Containers - Bungs closed						
Labeling of (Waste Labels, ID and date furnished)						
Containers (Corrosion, leakage, structural defects)						
Storage Incompatible material						
Vallets Damaged (e.g. broken wood, warping, nails missing)						
Base or Foundation (Cracks, spalling, uneven settlement)						
Bermed Area (Structural conditions, trenches, sump flow unobstructed)						
Fire Extinguishers (Charged)						
Sprinkler System (Water pressure, leaks, damaged)						
Emergency Eyewash/Shower (Water pressure, leaking, draining)						
Give date and how problem was rectified:						

MACDERMID: COMBUSTIBLE BERM - RECLAIM - GEAR STREET
CONTAINER STORAGE AREA INSPECTION LOG SHEET - WEEKLY

5/17/90

Department: _____
 Suitable: Y = Yes
 N = No

	INSPECTOR'S INITIALS*					OBSERVATIONS
	* DATE:	* DATE:	* DATE:	* DATE:	* DATE:	
Sealing of Containers - Bungs closed	TIME:	TIME:	TIME:	TIME:	TIME:	SEE BELOW
Waste Labels/I.D./Dates						
Labeling of Containers (Waste Labels, ID and date furnished)						
Containers (Corrosion, leakage, structural defects)						
Storage Material Compatible, Leaks, Spills						
2' Aisle space between totes/drums						
Height of stack						
Pallets Damaged (e.g. broken wood, warping, nails missing)						
Base or Foundation (Cracks, spalling, wet spots, uneven settlement)						
STACK 2 HIGH ONLY						
2nd Tier Strapped						
Fire Extinguishers (Charged)						
Sprinkler System (Water pressure, leaks, damaged)						
Curbing for Containers Storage Area, Cracks, Deterioration						
Give date and how problem rectified:						

TANK LEVEL - CAPACITY

Daily (In-Use) Inspection

[illegible]

*If gage not working properly, write in here date, problem and how fixed.

MACDERMID; BULK ETCH TANK STORAGE AREA/RECYCLING AREA
AND ANCILLARY EQUIPMENT
DAILY INSPECTION LOG SHEET

MACDERMID

Department:

ACCEPTABLE: Y = YES
N = NO

INSPECTOR'S INITIAL *

ITEM/TYPES OF PROBLEMS

Tank Shell - Cracks, corrosion, discoloration, bulges, buckles

Drainage System • clean/free of evidence of spilled material

Concrete Block Walls - cracks, sealant deterioration

Baso & Foundation - Cracks, spalling, uneven settlement, erosion, wet spots, sealant deterioration
Area around tank - spotting indicating leaking

(R-5/21/90)

***Give date and how problem rectified:

ACCEPTABLE: Y = YES
N = NO

Department:

Warning Signs - Damaged, missing.

Pipes/Fittings - leaks, corrosion, deterioration

Valves - loss of metal thickness, leaks, corrosion

Etch Tank Level Gages - Working order

Level - Tank filled to capacity unexpected volume loss

Sludge press, air, pressure gauge, pipes/valves/liftings -
loss of metal thickness, leaks, corrosion, deterioration
Warning light shut off for overfill - sludge holding tank -
light in good working condition

High Level Alarm (Working Order)

***Give date and how problem rectified:

MACDERMID: METAL HYDROXIDE SLUDGE WASTE AREA - DRY MATERIAL
WEEKLY INSPECTION LOG SHEET

Department: _____

 ACCEPTABLE: Y = Yes
 N = No

ITEM	TYPES OF PROBLEMS	INSPECTOR'S INITIALS*										NEGATIVE OBSERVATIONS*	
		*		*		*		*		*			
		DATE:	TIME:	DATE:	TIME:	DATE:	TIME:	DATE:	TIME:	DATE:	TIME:		
Sealant-Floor/Walls	Examine for cracks/deterioration												
Base of Foundation	Cracks, spalling, uneven settlement, erosion, wet spots												
Sludge Press Air Pressure Gauge	Loss of metal thickness, leaks, corrosion, or deterioration												
Pipes/Valves/Fittings													
30 yd ³ Roll-Off Container	Liner in place, sludge free of liquid												
Warning Lite Shut-off For Overfill-Sludge Holding Tanks	Lite good working condition												
Mobile Drainage System Catch Excess H ₂ O From Press	Clear/Free												
Filter Press: Material Should be Cake	Condition												
Sludge Holding Tanks	Leaks, valves												

 ***Give date and how problem rectified

MACDERMID: WEEKLY - RECLAIM CONTAINER STORAGE AREA INSPECTION LOG SHEET - WEEKLY

MACDERMID

Department: Main Recycle Barn

ACCEPTABLE: Y = YES
N = NO

INSPECTOR'S INITIAL*

ITEMS/TYPES OF PROBLEMS (Includes QC Inspection Area)	INSPECTOR'S INITIAL*				COMMENTS
	* DATE:	* DATE:	* DATE:	* DATE:	
Container Placement & Stacking - aisle space, height of stacks	TIME:	TIME:	TIME:	TIME:	
Racks in good condition - sagging, sway					
Labeling of Containers - Improper identification, date missing					
Containers - Corrosion, leakage, structural defects					
Storage Pallets - 3rd level and above strapped					
Storage Area - leaks, spills sump flow, unobstructed					
Pallets - Damaged (e.g. broken wood, warping)					
Base of container and storage area and foundation - Cracks, spalling, uneven settlement, wet spots					
Racks: Drum Inspection for levels, etc. Row B01, B02, B03, B04, B05, level 1-5					
Curbing for Container Storage Area - Cracks, deterioration					
High Level Alarm in Sump (working order)					
Solder Strips - Health Rating 3					
a. Containers: free from bulging, containers in good condition					
b. Labels: HMIS label on container or in lieu thereof, a Blue Label					

***Give date and how problem rectified:

MACDERMID: BULK LOADING/UNLOADING AREA
WEEKLY INSPECTION LOG SHEET

MACDERMID: _____

ACCEPTABLE: Y = Yes
N = No

Department: _____

ITEM/TYPES OF PROBLEMS

INSPECTOR'S INITIALS*

	INSPECTOR'S INITIALS*				DATE:	TIME:	COMMENTS
	*	*	*	*			
Base of Foundation - Cracks, spalling, uneven settlement, erosion, wet spots, sealant: deterioration	DATE:	DATE:	DATE:	DATE:	DATE:	TIME:	
Pipes/Valves/Fittings - Loss of metal thickness, leaks, corrosion or deterioration	TIME:	TIME:	TIME:	TIME:	TIME:	TIME:	
Level Gages - Working order							
Loading/Unloading Area - Spills (D)							
Drainage System - Sump Drains: clear/free evidence of spilled material							
Dike - cracks, deterioration							
Cinder Block Wall - Cracks, sealant deterioration							

Give date and how problem rectified:

MUST BE RETAINED FOR 5 YEARS

LARGE RECYCLE BERM
CONTAINER/BULK LOAD/UNLOAD
HUNTINGDON AVENUE
RCRA/CR WASTES

Complete Only When
Loading/Unloading

MONTHLY SEND COPY OF SHEET TO C. KEANE OK = √ PROBLEM - X*

Berm/Yard

Time	Date	Initials	Area Checked For		Storm Sewer PIGS	Tank Line Drip Pan	Damaged Container
			Leaks	Spills			

Storm Sewer: PIG's or cover to be applied when load/unload takes place.

Problem & How Rectified

Tank Lines: Drip bucket and/or pad under valves, gasket, hookup areas that may leak

MACDEPMID: TANKER TRUCK GARAGE
WEEKLY INSPECTION LOG SHEET

Equipment:		INSPECTOR'S INITIALS*								OBSERVATIONS SEE BELOW
Acceptable: Y = Yes N = No		*		*		*		*		
		DATE:	TIME:	DATE:	TIME:	DATE:	TIME:	DATE:	TIME:	
Use of Foundation	Cracks, spalling, uneven settlement, erosion, wet spots, sealant: deterioration									
Warning Signs	Good condition									
Pipes/Valves/Fittings	Loss of metal thickness, leaks, corrosion or deterioration									
Level Gages	Working order									
Drainage System	Sump Drains - Clear/Free Evidence of spilled material									
Block Wall	Cracks, sealant deterioration									

*Give date and how problem rectified

3/90

RCRA/CR WASTES ONLY .

OK = \checkmark Problem = Σ^*

[illegible]

*State problem and how rectified and date.

WEEKLY INSPECTION LOG SHEETS
EMERGENCY EQUIPMENT/SECURITY DEVICES

Company: _____ DATE: From: _____
 Inspector's Name: _____ To: _____
 Inspector's Title: _____

SAFETY AND EMERGENCY EQUIPMENT

D - Daily; M - Monthly

ITEM	TYPES OF PROBLEMS	DATE/TIME OF INSPECTION	ACCEPT.	UNACCEPT.	OBSERVATIONS	DATE AND NATURE OF REPAIRS AND REMEDIAL ACTION
Fire Alarm System	Power failure, audible alarm					
Absorbent Material	Out of Stock					
Emergency Shower and Eye Wash	Water pressure, leaking, drainage					
Water and Air Pumps	Power, clogging					
Goggles and Protective Glasses	Broken or dirty equipment					
Fire Extinguishers (M)	Needs recharging					
Rubber Gloves	Out of stock					
Telephone System/ Beepers/Paging (D)	Power failure					
Walkie-Talkies	Power, voice test					
First aid equipment and supplies (M)	Items out of stock or Inoperative					
Shovels	Condition/Out of Stock					
Chemical Suits	Out of Stock/ wear and tear					

WEEKLY INSPECTION LOG SHEETS
EMERGENCY EQUIPMENT/SECURITY DEVICES

Company: _____

DATE: From: _____

Inspector's Name: _____

To: _____

Inspector's Title: _____

SAFETY AND EMERGENCY EQUIPMENT

D - Daily; M - Monthly

ITEM	TYPES OF PROBLEMS	DATE/TIME OF INSPECTION	ACCEPT.	UNACCEPT.	OBSERVATIONS	DATE AND NATURE OF REPAIRS AND REMEDIAL ACTION
Scott Air Pack	Air delivery system, air quantity in reserve					
Respirators/Cartridges	Out of Stock					
Sprinkler System (M)	Loss of water pressure, signal to security service					
Facility Fence	Corrosion, damage to chain-link fence					
Gate	Corrosion, damage to chain-link fence					
Warning Signs	Damage, missing					
High Level Alarms (M)	Signal to ADT, audible alarm					



STATE OF CONNECTICUT

DEPARTMENT OF ENVIRONMENTAL PROTECTION



PERMIT TO OPERATE A COMMERCIAL WASTE STORAGE AND TREATMENT FACILITY

Pursuant to Section 22a-6 and 22a-454 of the Connecticut General Statutes (C.G.S.), a permit (permit) is hereby granted to MacDermid, Inc. (permittee) to operate a commercial waste storage and treatment (recycling) facility (facility), located at 526 Huntingdon Avenue, Waterbury, Connecticut.

The facility stores and treats RCRA hazardous and 22a-454 wastes generated from its chemical product manufacturing processes, received from customers and received from other MacDermid facilities. The facility shall be operated by the permittee and shall consist of on-site storage and treatment (recycling) of the waste. The facility capacity for containerized waste storage shall be 88,500 gallons and 26 cubic yards for five permitted container storage areas; for tank storage the capacity shall be 29,000 gallons for four permitted storage tanks; and for tank treatment (recycling) the capacity shall be 15,300 gallons for six permitted treatment (recycling) tanks.

Terms and Conditions

"Commissioner" means the commissioner of the connecticut department of environmental protection or his authorized agent.

"22a-454 Waste" means waste subject to the permit requirements of Section 22a-454 of the Connecticut General Statutes.

"CR02 Waste" means 22a-454 waste oil or petroleum that is no longer suitable for the service for which it was manufactured due to the presence of impurities or a loss of original properties, and is not miscible in water.

"CR04 Waste" means 22a-454 waste liquid, free flowing and/or contains free draining liquids and are toxic, hazardous to handle and/or may cause contamination of ground and/or surface water if improperly managed.

"CR05 Waste" means 22a-454 waste chemical solid or semi-solid from a commercial, industrial, agricultural, or community activity.

"Department or DEP" means the Connecticut Department of Environmental Protection.

"Hazardous Waste" means any waste material which may pose a present or potential hazard to human health or the environment when improperly treated, stored, transported or disposed of or otherwise managed including hazardous waste identified in accordance with section 3001 of the Resource Conservation and Recovery Act of 1976 (42 USC 6901 et seq.).

"RCRA" means the Resource Conservation and Recovery Act of 1976 (42 USC 6901 et seq.)

"RCSA" means the Regulations of Connecticut State Agencies.

This permit is based upon information submitted by the permittee in a permit application dated November 8, 1988, and revised March 12 and May 11, 1990, as well as additional supplementary submittals dated April 17, May 8, and 24, June 28, 1990; September 16, and October 7 and 23, 1991; February 17, April 10, June 16, and 23, and December 14, 1992; April 5, 16, 30, and May 3, and 10, 1993; and April 22, 1994. The permittee shall keep records of all data used to complete the permit application and any supplemental information submitted for the effective term of this permit and any renewals thereof. The permit application is hereby incorporated by reference as part of the permit. Any inaccuracies found in the information submitted by the permittee may result in revocation, reissuance, or modification of this permit and civil or criminal enforcement action.

The permittee shall comply with all terms and conditions of this permit. This permit consists of the conditions contained herein and the information as specified in the application, except where the application is superseded by the more stringent conditions contained herein. Violations of any provision of this permit are subject to enforcement action pursuant to Section 22a-6a of the C.G.S.

This permit may be revoked, suspended, modified, transferred, or reissued in order to comply with applicable law. Any significant modifications must be approved by the DEP. A revised permit application must be submitted to DEP at least 90 calendar days before making such changes. Significant modifications include but are not limited to:

- a. New waste types not previously permitted for;
- b. Changes in process activities;
- c. Increase in design capacity; and/or
- d. Changes in ownership or operational control of the facility.

This permit shall remain in effect and shall expire on the _____ day of _____, 1999.

Date

Robert E. Moore
Deputy Commissioner

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Tables, Figures and Appendices:

Table A	Container Storage Areas
Table B	Storage Tanks
Table C	Treatment Tanks

Figures 1 through 10 identify the container and tank storage areas, and the treatment and processing areas, as described below. These figures contained in the hazardous waste permit EPA I.D. No. CTD001164599, may be found in Section II and are incorporated by reference.

Figure 1	Facility Layout
Figure 2	Main Container Storage Area
Figure 3	Combustible Storage Area
Figure 4	Flammable Materials Storage Area
Figure 5	Metal Hydroxide/Sulfide Sludge Storage Area
Figure 6	Metal Hydroxide/Sulfide Sludge Storage Area Cross Section A-A
Figure 7	Quality Control Area
Figure 8	Waste Storage Area
Figure 9	Hazardous Waste Storage Tanks Cross Section A-A
Figure 10	Bulk Loading Unloading Area

Attachment A Waste Analysis Plan

Included within Attachment A, the Waste Analysis Plan, are the following Tables, Figures and Appendices.

Table 1	Used Surface Finishing Chemicals Received From Customers or Off-site MacDermid Facilities For Recycling
Table 2	Description of Wastes Received From MacDermid's 245 Freight Street Facility
Table 3	Description Of Wastes Generated On-site
Table 4	Spot Tests For Used Surface Finishing Chemicals
Table 5	Collection/Sample Preservation Requirements
Table 6	Allowable Waste Storage Locations, Container Types, and Hazard Classes
Figure 1	Flow Diagram for Accepting or Rejecting Used Surface Finishing Chemicals From Customers and Off-Site MacDermid Facilities

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Appendix 1	Sample Waste Characterization/Verification Forms: MacDermid's Generator Certification Package, for recyclable hazardous wastes being returned to MacDermid, Inc.; On-site Generated Waste (report form); Generated Waste - Spot Test (report form).
Appendix 2	A Description of the Internal Waste Tracking System
Appendix 3	Spot Testing Procedures

PERMIT CONDITIONS

STATE PERMIT
Connecticut General Statutes
22a-454

A. PERMIT CONDITIONS

Permit conditions take precedence over any data or information submitted in the permit application or attachments. However, references may be made to specific sections of the permit application.

1. Design and Operation of Facility

The facility or any part used thereof for the purpose of storage and treatment (recycling) of 22a-454 wastes shall be designed, operated and maintained in accordance with the plans, figures and specifications contained in the permit application, and as may be modified by the conditions contained herein. The facility shall be operated and maintained in such a manner as to:

- a. minimize the possibility of fire, explosion, or any unplanned sudden or non-sudden release of contaminants to the environment;
- b. protect the public health, welfare, and safety; and
- c. ensure compliance with all applicable provisions of this permit.

The permittee shall ensure that all the appropriate equipment necessary for the proper operation of the facility is installed and maintained in satisfactory operating condition for the term of the permit.

Within thirty (30) days of issuance of this permit the facility shall be inspected by a professional knowledgeable in the Connecticut Fire Safety Code (i.e., a local Fire Marshal or his/her equivalent) and such person shall prepare a certification report which the permittee shall submit to DEP for review and written approval. This certification report shall document that the facility is in compliance with the Connecticut Fire Safety Code and all applicable reference standards (i.e., NFPA 101 Safety to Life from Fire in Buildings and Structures, Chapter 28, Industrial Buildings, 1988 edition or most recent revision, and NFPA 30 Flammable and Combustible Liquids Code) as adopted under the RCSA Section 29-292-1b and the C.G.S. Section 29-320 with respect to ventilation of organic vapors and fire control for the waste streams managed.

Prior to use of the proposed 5000 Gal. copper treatment tank, the Permittee shall provide a Professional Engineer Certification addressing tank and ancillary equipment design and installation in accordance with appropriate national standards such as American Petroleum Institute (API), Steel Tank Institute (STI), or their equivalent.

This permit does not relieve the permittee of the obligation to obtain any other authorization as may be required by other provisions of the C.G.S. or the Regulations of the Connecticut State Agencies. In addition, only the 22a-454 Wastes specified in this permit may be stored or treated at the facility. The terms or conditions of this permit does not relieve the permittee of the obligation to comply with other federal, state or local requirements and laws.

2. Permitted Capacity

Prohibitions: the permittee shall not accept wastes which have the Health Degree of Hazard Rating of 4 as defined in the National Fire Protection Association (NFPA) 704 "Standard System for the Identification of the Fire Hazards of Materials".

22a-454 Wastes shall only be managed in the designated waste management areas identified in Tables A, B, and C, included herein.

3. Waste Analysis Plan

The Waste Analysis Plan (see Attachment A) details how physical and chemical properties shall be determined for representative samples of 22a-454 Wastes from each generator so that sufficient information is known in order to store and treat 22a-454 Wastes. The 22a-454 Wastes capable of being received at the Huntingdon Avenue facility and the allowable concentrations for selected parameters are identified in Tables 1, 2, 3, and 4.

The permittee is responsible for an initial waste characterization prior to managing 22a-454 Wastes and shall, where indicated, perform waste verification prior to the permittee accepting any waste shipment at the MacDermid Huntingdon Avenue facility. The permittee shall require the submittal of complete waste profile information and shall require, as necessary, the submittal of analytical data for each waste as described in Attachment A. The permittee shall record this information in the facility operating record for the term of this permit and any renewals thereof.

For the purpose of waste characterization the permittee shall, as required in Attachment A, analyze a sample from each generator which is representative of each waste which the permittee may manage at the Huntingdon Avenue facility. All sampling and testing shall be performed in accordance with "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", EPA Publication SW-846 or an alternate method approved by the DEP.

- a. For regulatory compliance purposes, the permittee shall ensure that the waste characterization, as described in this permit, is complete and accurate so as to identify the wastes to be received on-site and so as to prohibit wastes other than the wastes specifically allowed pursuant to the permit from being accepted, stored, or treated at the facility. The permittee shall analyze all wastes for the waste characterization parameters in accordance with Tables 1, 2, and 3. Documentation of waste characterization shall be maintained in the operating record for the term of the permit and any renewals thereof.
- b. Waste verification shall be performed for each generator's waste stream(s) prior to the permittee accepting any waste shipment at the Huntingdon Avenue facility. For each shipment, each separate and distinct waste stream from each waste generator shall be sampled for the waste verification parameters specified in Table 4.
- c. The permittee shall at all times keep a copy of the Waste Analysis Plan at the facility.
- d. The permittee shall only accept waste streams that meet the acceptable parameter concentrations/values specified. For wastes which are rejected a report shall be completed which identifies the waste generator, the waste, and the specific reason for rejection. A copy of the rejection report shall be retained in the facility operating record for the term of the permit.

4. Inspections

Inspection Schedule

For each day in which the facility is being operated, the permittee shall visually inspect the process equipment, storage structures, and other process related materials and equipment for, at a minimum, releases, malfunctions, operator error, or unauthorized activities.

- a. The permittee shall inspect daily when in use: the waste storage area for seepage, spills, and/or signs of other releases; for signs of containment structure malfunction; for indications of improper start-up and shutdown procedures; for signs of malfunctions in the treatment unit and associated equipment which may be causing, or may lead to:
 - i. release of 22a-454 Waste constituents to the environment, or
 - ii. a threat to human health or the environment.

- b. The permittee shall inspect all safety and spill control equipment on a monthly basis to ensure that the necessary equipment is on hand and in good working order. Whenever safety and spill control equipment is used, it shall be immediately replaced or reconditioned in a manner such that this equipment is equivalent in quality to the original equipment.
- c. The permittee shall keep the inspection schedule at the facility at all times.

Inspection Records and Inspection Logs

The permittee shall record such observations and incidents in the Inspection Log, Attachment E of the hazardous waste permit, EPA I.D. Number CTD001164599, and maintain this information in the operating record for the term of the permit. The Inspection Log shall identify the types of problems to be looked for during the inspection, the frequency of inspections, and any remedial action taken, and shall include the date and name of the person conducting the inspection.

Inspection Remediation

The permittee shall remedy any deterioration or malfunction of the equipment or structures which the inspections above reveal. The permittee shall correct any problems noted in the inspection immediately upon detection.

5. Contingency Plan

The Contingency Plan (included as Attachment B in the hazardous waste permit, EPA I.D. No. CTD001164599) describes the actions facility personnel must take in response to fires, explosions, or any unplanned sudden or non-sudden release of 22a-454 Wastes to the air, soil, or waters of the state which could threaten human health or the environment. This plan shall be retained on-site for the term of this permit.

The permittee shall implement the facility Contingency Plan identified above whenever fires, spills, or other potentially hazardous events occur in any of the waste storage or processing areas.

6. Security

The permittee shall provide a means to prevent unauthorized entry on to the facility site.

7. Closure Plan, Cost Estimate, Financial Assurance

The Closure Plan describes in detail how all waste, waste residues, containers, tanks, processing areas and systems, storage structures, contaminated soil and other equipment will be disposed of or decontaminated at final closure in order to minimize the need for further maintenance and control and minimize the threat to human health and the environment. The Plan also contains an estimate of the total costs to effect final closure of the facility.

The permittee shall close the facility (i.e., the waste storage areas, the receiving and processing areas and the treatment (recycling) areas and all associated equipment, etc.) in accordance with the applicable sections of the facility Closure Plan included as Attachment C in the facility hazardous waste permit, EPA I.D. No. CTD001164599.

The financial assurance document approved by the Commissioner, to cover facility closure, is to be updated and submitted to the DEP on or before October 1st of each year this permit is effective.

8. Personnel Training

The Training Plan describes the training facility personnel are given in order to properly handle and process the wastes managed at the facility. The Training Plan to be followed is identified as Attachment D of the facility hazardous waste permit, EPA I.D. No. CTD001164599. The Training Program must be directed by a person trained and thoroughly knowledgeable in all aspects of managing 22a-454 Waste, including being trained to properly operate the treatment equipment. At a minimum, the plan must include but is not limited to, the following:

- a. Procedures for using, inspecting, testing, and replacing emergency, spill control, and safety monitoring equipment;
- b. Contingency Plan implementation;
- c. Proper/safe start-up and shut-down of operations; and
- d. Proper waste analysis procedures.

9. Manifest

The permittee shall require and the use and completion of a manifest for all 22a-454 Waste shipped to and from the facility. Manifest forms to be used shall be a current Connecticut Hazardous Waste Manifest or an alternated waste manifest approved in writing by the Commissioner.

10. Record Keeping (operating record)

The permittee shall maintain an operating record for the term of the permit which shall include but is not limited to:

- a. Properly completed manifests for all waste shipped to or from the facility;
- b. Copies of all reports relating to release or potential for release of 22a-454 Waste, fire or explosion incidents;
- c. The location of each waste storage and treatment area within the facility and the quantity of waste managed at each location (i.e., the inventory log);
- d. Records and results of inspections as required by this permit;
- e. Results of waste analyses performed;
- f. Documentation which verifies that the wastes received are, where applicable, not RCRA hazardous wastes (e.g., Material Safety Data Sheets (MSDS), laboratory analysis results, etc);
- g. Annual waste re-characterization documentation; and
- h. Documentation of all shipments of waste that the permittee rejects, the reason(s) for rejection and the final disposition of the rejected waste. A copy of a dated and signed manifest shall be included in this information.

11. Specific Requirements for Containers, Tanks and Treatment (Recycling) Units

- a. All containers and tanks which contain wastes with the Health Degree of Hazard Rating of 3 as defined in NFPA 704 shall only be sampled by facility personnel when wearing appropriate personnel protective equipment.
- b. All containers and tanks are to be in good condition, intact, structurally sound, and not crushed, leaking or corroding.
- c. Containers and tanks should be kept closed at all times except when necessary to add or remove wastes or sample the contents.
- d. The container and tank shall be compatible with the waste being stored and protected against damage.
- e. All containers and tanks shall be marked or labelled.

- f. Containers shall be placed on pallets to avoid contact with standing liquids.
- g. Container stacking is limited to no more than 2 (two) containers high per pallet, and the pallets may be stored utilizing a rack system as described in the permit application.
- h. Containers and tanks shall be placed on a surface which is sufficiently impervious to prevent the migration of wastes to the subsurface soils, water and to the environment.
- i. The Solder Stripper and the Copper Etchant recycling processes shall be monitored at all times when in use.
- j. The Copper Etchant reactors shall be equipped with appropriate rupture disks.

B. DUTIES AND REQUIREMENTS

- 1. Operation and Maintenance. The permittee shall at all times operate and maintain all facilities and systems for the storage, treatment (recycling) and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Operation and maintenance includes effective performance, funding, operator staffing and training; and laboratory and process controls, including quality assurance procedures sufficient to comply with this condition. This provision shall require the operation of back-up auxiliary facilities or similar systems only when necessary to achieve compliance with the conditions of the permit.
- 2. Duty to Mitigate. The permittee shall take all reasonable steps to minimize or correct any adverse impact on the environment for non-compliance with this permit.
- 3. Inspection and Entry. The permittee shall allow the Commissioner, or his authorized representative, upon the presentation of credentials and other documents as may be required by law to:
 - a. Enter at reasonable times upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;
 - b. Have access to and copy, at reasonable times, any records, as allowed by law, that must be kept under conditions of this permit;
 - c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices or operations regulated or required under this permit; and

- d. Sample or monitor at reasonable times, for the purposes of assuring permit compliance, any substances or parameters at any location.

4. Reporting Requirements.

- a. Emergency reporting. The permittee shall report any non-compliance with any applicable law, regulation, or permit including non-compliance with this permit, orally to the DEP Oil and Chemical Spills Section, as soon as the permittee becomes aware of such non-compliance including, but not limited to the following:

- i. A release that may cause endangerment to public drinking water supplies or which could threaten the environment or human health;
- ii. Any fire or explosion at the facility which could threaten the environment or human health;
- iii. The description of the occurrence and its cause shall include:

- (A) Name, address, and telephone number of the owner or operator;
- (B) Name, address, and telephone number of the facility;
- (C) Date, time and type of incident;
- (D) Name and quantity of material(s) involved;
- (E) The extent of injuries, if any;
- (F) An assessment of actual or potential hazards to the environment and human health outside the facility, where this is applicable; and
- (G) Estimated quantity and disposition of recovered material that resulted from the incident.

- iv. A written submission shall be provided to the Commissioner within 5 days of the time the permittee becomes aware of the circumstances causing such non-compliance. The written submission shall contain a description of the non-compliance and its cause; the period of non-compliance including exact dates and times and, if the non-compliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent re-occurrence of the non-compliance. The Commissioner may waive the five day written notice requirement in favor of a written report within fifteen days.

- b. Manifest discrepancy report. If a manifest discrepancy is not resolved within 15 days after receiving the 22a-454 Waste, the permittee shall immediately submit to the Commissioner a letter describing the discrepancy and attempts to reconcile it, and a copy of the manifest in question.
 - c. Unmanifested waste report. Should the facility accept 22a-454 Wastes without an accompanying manifest, then the permittee shall prepare and submit a single copy of an unmanifested waste report to the Commissioner. The report shall include but is not limited to the following information:
 - i) The name and address of the generator shipping the waste;
 - ii) The date the facility received the waste;
 - iii) A description and quantity of the waste received; and
 - iv) A brief explanation of why the waste was not manifested.
 - d. Annual report. An annual report must be submitted covering facility activities during the previous calendar year.
 - e. Other non-compliance. The permittee shall report all instances of non-compliance.
 - f. Other information. Where the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application, or in any report to the Commissioner, the permittee shall promptly submit such facts or information.
 - g. Nothing in this permit shall relieve the permittee from compliance with other federal, state or local laws.
5. Duty to Reapply. The permittee may file for renewal of this license in accordance with RCSA Section 22a-3a-5 and any other applicable provisions of the law.
6. Duty to Provide Information. The permittee shall, upon written request, furnish to the Commissioner within fourteen (14) days from the date of request copies of records required to be kept by this permit.
7. Severability. The provisions of this permit are severable, and if any provisions of this permit, or the application of any provisions of this permit to any circumstance is held invalid, the application of such provisions to other circumstances and the remainder of this permit shall not be affected thereby.

C. FACILITY COMPLIANCE SCHEDULE

1. Retention of Consultant.

On or before thirty days after permit issuance, permittee shall retain one or more qualified consultants acceptable to the Commissioner to prepare the documents and implement or oversee the actions required by paragraphs C.2., 3., and 5. of this permit and shall, by that date, notify the Commissioner in writing of the identity of such consultants. On or before thirty days after permit issuance, permittee shall also submit to the Commissioner a description of such consultants' education, experience and training which is relevant to the work required by paragraphs C.2., 3., and 5. of this permit. Permittee shall retain one or more qualified consultants acceptable to the Commissioner until paragraphs C.2., 3., and 5. of this permit are fully complied with, and, within ten days after retaining any consultant other than one originally identified under this paragraph, permittee shall notify the Commissioner in writing of the identity of such other consultant.

The consultant retained to conduct the environmental audits and compliance checks required by paragraph C.2. of this permit shall have a detailed and thorough knowledge of the regulations and statutes identified in that paragraph, and shall have at least three year's experience in conducting environmental audits. The consultant retained to conduct the management audits required by paragraph C.3. of this permit shall have at least three years experience in reviewing and providing recommendations on environmental management systems, practices, and policies.

The consultant retained to conduct the waste minimization program required by paragraph C.5. of this permit shall have at least one year of experience in developing and implementing hazardous waste minimization programs. Nothing in this paragraph shall preclude the Commissioner from finding a previously acceptable consultant unacceptable.

2. Environmental Audits and Permit Compliance Audits.

Permittee shall comply with the requirements for environmental audits and compliance checks for the facility as specified in the Stipulated Judgment in the matter of Commissioner of Environmental Protection v. MacDermid, Inc., docket number CV91-501049 S, Superior Court, Judicial District of Hartford-New Britain at Hartford ("the Judgment"). In addition to what is required by the Judgment, permittee shall also do the following at the facility, with respect to said audits and compliance checks:

- a. In addition to complying with the requirements of paragraph 1(b) of the Judgment, permittee shall also submit a written work plan for conducting the environmental audits and compliance checks at the facility required by subparagraphs C.2.b. and C.2.c. below.

Said work plan need only be submitted once, unless permittee retains a new consultant for any reason, in which case permittee shall submit a revised scope of study which reflects any changes in the work plan brought about by the hiring of the new consultant.

- b. In addition to complying with the requirements of paragraph 1(c) of the Judgment, permittee shall also conduct audits and compliance checks, alternately, on a quarterly basis, to determine compliance with Sections 22a-174-1, et seq., of the Regulations of Connecticut State Agencies, and Section 22a-454 of the Connecticut General Statutes, as amended.
- c. In addition to complying with the requirements of paragraph 1(c) of the Judgment, permittee shall also conduct audits and compliance checks, alternately, on a quarterly basis, to determine compliance with the provisions of the permittee's RCRA hazardous waste facility permit and 22a-454 Wastes permit. This shall include, but shall not necessarily be limited to, an assessment of permittee's compliance with:
 - i. The RCRA hazardous waste facility permit Standard Conditions (Section I), Permitted Areas, Activities, Capacities, and Materials (Section II), Compliance Schedule (Section III), Operating Conditions (Section IV), General Conditions (Section V), and Attachments (Section VI).
 - ii. The 22a-454 Wastes permit "Permit Conditions" (paragraphs A.1. through A.11., inclusive), and "Duties and Requirements" (paragraphs B.1. through B.7., inclusive).
- d. In addition to complying with the requirements of paragraph 1(d) of the Judgment concerning submittal of a detailed written report of the results of the compliance audit or compliance checks, permittee shall include in such report the permittee's compliance or non-compliance at the facility with the regulations, statutes, and permits listed in subparagraphs C.2.b. and C.2.c. above.
- e. In addition to complying with the requirements of paragraph 1(e) of the Judgment, permittee shall also immediately take prompt remedial action to correct each and every violation disclosed during each environmental audit conducted at the facility pursuant to paragraphs C.2.b. and C.2.c. above, and shall also, within fifteen days of discovery of any such violation, submit to the Commissioner for review and written approval a report which describes all remedial actions taken to address any such violations disclosed during the audit.

If the permittee reasonably believes that any of the violations will take more than thirty days to complete, the permittee shall, within fifteen days of the discovery of the violation, submit to the Commissioner, for review and written approval, along with such written report, a detailed written plan for remediation, including but not limited to, a description of the specific steps that are needed to correct the violation and a schedule to complete said measures. In the event an environmental audit or compliance check at the facility discloses the need for additional permits or permit modifications, the permittee shall, along with such written report, identify such needs and shall promptly complete and file any and all permit applications with the Commissioner.

- f. In addition to the individuals listed in paragraph 1(j) of the Judgment, permittee shall submit copies of any documents required to be submitted to the Commissioner under the Judgment and under this paragraph to the following persons:
 - i. George Dews, Supervising Sanitary Engineer, Engineering and Enforcement Division, Bureau of Waste Management, Department of Environmental Protection, 79 Elm Street, Hartford CT 06106;
 - ii. Ross Bunnell, Sanitary Engineer, Engineering and Enforcement Division, Bureau of Waste Management, Department of Environmental Protection, 79 Elm Street, Hartford CT 06106; and
 - iii. Robert Rubino, Assistant Director, Engineering and Enforcement Division, Bureau of Air Management, Department of Environmental Protection, 79 Elm Street, Hartford CT 06106;

3. Environmental Management Audits.

- a. Within 60 days of permit issuance, permittee shall submit for the Commissioner's review and written approval, a scope of study for the performance of comprehensive environmental management audits of the facility ("management audits"), to be conducted on an annual basis for the duration of this permit, by an independent environmental auditor ("auditor") approved under paragraph C.1. of this permit. Such scope of study shall include an outline indicating how the permittee's environmental compliance systems, practices, and policies will be audited so as to satisfy the requirements of subparagraph C.3.b. below, and a schedule for completing the management audits.
- b. On or before 120 days after the Commissioner's approval of the scope of study required by subparagraph C.3.a. above, and then annually thereafter for the duration of this permit, permittee shall submit for the Commissioner's review and written approval a written environmental management audit report ("report"). Such report shall, at a minimum:

- i. Identify and describe the existing facility environmental management operations and the corporate offices responsible for overall, company-wide environmental compliance and management systems, policies, and prevailing practices as they affect the permittee's compliance with its facility environmental permits, and with Regulations of Connecticut State Agencies Sections 22a-449(c)-11, 22a-449(c)-100 through 110, inclusive, 22a-174-1 et seq., 22a-430-3, 22a-430-4, and Connecticut General Statutes Section 22a-454, as amended.
- ii. Evaluate such operations and systems, practices, and policies, and identify and describe fully the perceived deficiencies in such operations and systems, practices, and policies by comparing them, to the extent practicable, to:
 - (A) their ability to promote compliance with the permit, regulatory, and statutory requirements at the facility, as listed in subparagraph C.3.b.i. above.
 - (B) the existing practices, programs, and policies of other companies operating within the continental United States which are similar in size, which produce similar products, and which conduct similar operations as the permittee. This shall include, but shall not be limited to, a consideration of the available literature, and the auditor's experience regarding regulatory compliance programs, practices, and policies currently operative in the chemical supply industry in the continental United States.
 - (C) the history of the permittee's operations in terms of the facility's compliance programs, compliance record, and environmental management practices since January 1, 1987.
- iii. Based on the evaluation required in subparagraphs C.3.b.i. and C.3.b.ii. above, identify, describe, and evaluate the areas, if any, where the permittee's environmental management systems, practices, and policies at the facility should be improved as they affect the permittee's compliance with the permit, regulatory, and statutory requirements identified in subparagraph C.3.b.i. above, and listing specific options for any improvements, if any, at the facility in the following areas:
 - (A) environmental compliance program management, operation, staffing, education, and experience requirements.

- (B) compliance management funding, lines of authority to the permittee's corporate offices responsible for overall company-wide environmental compliance and management systems, policies, and practices, and relationship to the facility manager, as they affect the Huntingdon Avenue facility.
- (C) personnel training for individual employee compliance obligations.
- (D) operations and maintenance (O&M) procedures for waste handling, storage, recycling, and pollution control equipment.
- (E) evaluation of chemical manufacturing and recycling operations and pollution control equipment in terms of adequacy of design and compatibility with the wastes or other materials being managed by such systems.
- (F) the quality and thoroughness of implementation of all waste and wastewater analysis plans for both incoming and outgoing waste streams, whether directly discharged, emitted, or otherwise released to the environment, or whether conveyed off-site.
- (G) preparation of quality assurance and quality control programs for sampling and analysis and for environmental testing procedures at the permittee's on-site facility laboratories and off-site contract laboratories.
- (H) preparation and maintenance of records needed to provide the permittee's management with an adequate data base to accurately determine compliance with all applicable statutory and regulatory requirements, with particular attention given to the generation (including quantity and chemical composition), handling, treatment, and ultimate disposition by location of all wastes, wastewaters, or air pollutants.
- (I) preparation of self-monitoring reports required to be filed with the State of Connecticut DEP and with EPA.
- (J) preparation and review of incident reports evaluating causes of waste handling, recycling, waste treatment, and pollution control equipment malfunctions, improper waste, wastewater, or air pollutant handling, or breakdowns, with specific recommendations for corrective steps and preventative O&M, along with procedures for reporting these recommendations to corporate headquarters.

c. Within 60 days of submittal of each annual management audit report required to be submitted by subparagraph C.3.b. of this permit, permittee shall submit for the Commissioner's review and written approval, that portion of the report referred to in paragraph C.3.b.iii. above which contains the recommendations of the auditor, together with a report of permittee's evaluation of each option it has selected for adoption, and, for any option it does not propose to adopt, either

- i. the reasons for rejecting that option, or
- ii. an alternative proposal for achieving the desired result of the rejected option.

Said report by permittee shall set forth the specific actions that shall be taken, and a schedule, not to exceed 180 days from the date the Commissioner approves the permittee's report, for implementation of the recommendations adopted by the permittee.

4. Statement Regarding Audits to be Included in Annual Report to Stockholders.

The permittee shall include the following statement in its next Annual Report to Stockholders:

"The terms of a State of Connecticut permit require MacDermid to have periodic environmental compliance and environmental management audits performed at its Waterbury, Connecticut facility. These audits will take place over a five year period commencing in 1993. An environmental consultant has been selected by MacDermid to conduct the audits and submit appropriate recommendations."

5. Waste Minimization Program.

Permittee shall develop and execute a waste minimization program for the facility, the purpose of which shall be to investigate alternatives to reduce the volume, toxicity, and degree of hazard posed to human health and the environment by the hazardous wastes generated at the facility, and to select those alternatives which will produce the greatest benefit, after being adjusted for the corresponding costs, provided that such alternatives are technically, economically, and institutionally feasible. The independent environmental auditor approved in accordance with paragraph C.1 of this permit shall prepare the documents and implement or oversee the actions required by this paragraph, in accordance with the following schedule:

- a. Pre-Audit Phase. On or before 60 days after permit issuance, permittee shall submit for the Commissioner's review and written approval a scope of study for the investigation of alternatives to reduce the volume, toxicity, and degree of hazards posed to human health and the environment by the hazardous wastes generated at the facility, and for the selection of those alternatives which will produce the greatest benefit, after being adjusted for the corresponding costs, provided that such alternatives are technically, economically, and institutionally feasible. Such scope of study shall include but not be limited to:
 - i. a plan for conducting a waste minimization audit, ("minimization audit") the purpose of which shall be to collect the information necessary for the investigation of alternatives for reducing the volume, toxicity, and hazards to human health and the environment posed by the hazardous wastes generated at the facility, and a proposed schedule for performing such audit. Such plan shall include, but not be limited to: a description of the site-specific waste minimization methods which will be considered during the audit and the range of potential waste minimization projects which will be considered during the audit; a list of the hazardous waste generating activities and processes proposed to be audited, which shall include all hazardous waste generating activities and processes at the facility; a list of the documents proposed to be reviewed during the audit; and the criteria proposed to be evaluated during the audit in order to ensure that all the data required to complete the analysis required by paragraph C.5.c. of this permit will be collected. Such schedule shall provide for completion of the audit as soon as possible, but in no event later than ninety days after the date of the Commissioner's approval of the scope of study.
 - ii. For each consultant who has been retained to develop and execute the waste minimization program, a detailed description of the proposed duties and responsibilities of such individual in the preparation and execution of the waste minimization program and a detailed description of the qualifications of such individual to carry out such duties and responsibilities.
- b. Audit Phase. On or before 90 days after the Commissioner's approval of the scope of study, permittee shall perform the actions specified in the approved scope of study in accordance with the approved schedule(s).

- c. Analysis Phase. On or before 150 days after the Commissioner's approval of the scope of study, permittee shall submit for the Commissioner's review and written approval a comprehensive and thorough report which:
- i. describes in detail the volume and types of hazardous wastes QDSQSatd at the facility;
 - ii. describes in detail the results of the minimization audit, including but not limited to a list of the hazardous waste generating activities and processes audited; a list of the documents reviewed during the audit; and the criteria evaluated during the audit. These results shall be reported in accordance with the plan and schedule approved by the Commissioner pursuant to this subparagraph C.5.a. of this permit.
 - iii. evaluates the alternatives for reducing the volume, toxicity, and degree of hazards posed to human health and the environment by the hazardous wastes generated at the facility including the amount of such reduction achievable by each alternative;
 - iv. proposes preferred alternatives for at least ten (10) waste minimization projects ("minimization projects"), which shall include at least one project per waste stream generated at the facility, with supporting justification therefor;
 - v. proposes a detailed plan and schedule to perform the preferred alternatives; and,
 - vi. proposes a program and schedule for evaluating the effectiveness of the minimization projects approved pursuant to this paragraph, including, but not limited to, the submission of written reports evaluating and quantifying the extent to which the volume, toxicity, and hazards to human health and the environment of the hazardous wastes generated at the facility have been reduced. The first such report shall be submitted no later than one year after completing the approved minimization projects, and subsequent reports shall be submitted annually thereafter, for the duration of this permit.
- d. Permittee shall propose alternatives which will 1.) reduce the volume, toxicity, and degree of hazards posed to human health and the environment by the hazardous wastes generated at the facility, and 2.) produce the greatest benefit, after being adjusted for the corresponding costs, provided that such alternatives are technically, economically, and institutionally feasible.

If permittee demonstrates to the satisfaction of the Commissioner that it cannot propose ten (10) such minimization projects, by submission of supporting documentation, permittee shall perform those projects which are approved by the Commissioner.

- e. Implementation Phase. Permittee shall perform the approved minimization projects in accordance with the approved schedule(s), and, within fifteen (15) days of completing each such project, shall certify to the Commissioner in writing that the projects have been completed as approved, and documentation demonstrating such completion.
- f. Evaluation Phase. Permittee shall perform the evaluation program required by subparagraph C.5.c.vi. above in accordance with the schedule approved pursuant to that subparagraph.

6. Open House.

No later than one year after permit issuance and then at least yearly thereafter for the duration of this permit, permittee shall conduct an open house of the facility for the community in which the facility is located. Such open house shall be offered at a time and date which local residents are likely to be able to attend, such as in the evening or on a weekend, and shall include but not be limited to a tour of the facility, and an opportunity for local residents to obtain answers to questions they may have concerning the permittee's compliance with environmental laws and regulations, and with its facility permits.

7. Approvals.

Permittee shall use best efforts to submit to the Commissioner all documents required by this permit in a complete and approvable form. If the Commissioner notifies the permittee that any document or other action is deficient, and does not approve it with conditions or modifications, it is deemed disapproved, and permittee shall correct the deficiencies and resubmit it within the time specified by the Commissioner or, if no time is specified by the Commissioner, within thirty days of the Commissioner's notice of deficiencies. In approving any document or other action under this permit, the Commissioner may approve the document or other action as submitted or performed or with such conditions or modifications as the Commissioner deems necessary to carry out the purposes of this permit. Nothing in this paragraph shall excuse noncompliance or delay.

8. Definitions.

As used in this permit,

- a. "Commissioner" means the Commissioner or an agent of the Commissioner.

- b. "permittee" means MacDermid, Incorporated.
- c. "the facility" means the chemical liquids and hazardous waste storage and treatment facility owned by MacDermid, Incorporated and located at 526 Huntingdon Avenue in Waterbury, Connecticut.

9. Dates.

The date of submission to the Commissioner of any document required by this permit shall be the date such document is received by the Commissioner. The date of any notice by the Commissioner under this permit, including but not limited to notice of approval or disapproval of any document or other action, shall be the date such notice is personally delivered or the date three days after it is mailed by the Commissioner, whichever is earlier. Except as otherwise specified in this permit, the word "day" as used in this permit means calendar day. Any document or action which is required by this permit to be submitted or performed by a date which falls on a Saturday, Sunday or a Connecticut or federal holiday shall be submitted or performed on or before the next day which is not a Saturday, Sunday, or Connecticut or federal holiday.

10. Certification of Documents.

Any document, including but not limited to any notice, which is required to be submitted to the Commissioner under this permit shall be signed by a responsible corporate officer of the permittee or a duly authorized representative of such corporate officer, as those terms are defined in section 22a-430-3(b)(2) of the Regulations of Connecticut State Agencies and by the individual or individuals responsible for actually preparing such document, each of whom shall certify in writing as follows: "I have personally examined and am familiar with the information submitted in this document and all attachments and certify that based on reasonable investigation, including my inquiry of those individuals responsible for obtaining the information, the submitted information is true, accurate and complete to the best of my knowledge and belief, and I understand that any false statement made in this document or its attachments may be punishable as a criminal offense."

11. False Statements.

Any false statement in any information submitted pursuant to this permit may be punishable as a criminal offense under Section 22a-438 or 22a-131a of the Connecticut General Statutes or, in accordance with Section 22a-6, under Section 53a-157 of the Connecticut General Statutes.

12. Notice to Commissioner of Changes.

Within fifteen days of the date permittee becomes aware of a change in any information submitted to the Commissioner under this permit, or that any such information was inaccurate or misleading or that any relevant information was omitted, permittee shall submit the correct or omitted information to the Commissioner.

TABLE A

Container Storage Areas

<u>Storage Area</u>	<u>Permitted Waste Streams</u>	<u>Permitted Waste Codes</u>	<u>Permitted Capacity</u>
Main Container Storage Area	Copper Etchant	CR04	77,000 gallons:
	Solder Conditioner	CR04	Max. of 1400 55-gallon drums
	Solder Stripper	CR04	Max. of 20 330-gallon Storage Totes
	Electroless Copper	CR04	
	Acid Zinc Solution	CR04	
	Cadmium Plating Solution	CR04	
	Acid Copper Solution	CR04	
	Palladium Solution	CR04	
	Zinc/Cobalt Chloride Solution	CR04	
	Waste Nickel Solution	CR04	
	Lead Fluoride Sludge	CR05	
	Laboratory Apparatus	CR04	
	Stannous Sulfate Solution	CR04	
	Chelated Waste Cleaner	CR04	
QC Area (Waste Staging Area)	(Same Waste Streams as Main Container Storage Area)	(See Above)	6380 gallons: Max. of 80 55-gallon drums Max. of 6 330-gallon storage totes
Combustible Storage Area	Vacuum Pump Oil/ Inks	CR02	4,290 gallons:
	Waste Mixed Solvents,	CR04	Max. of 54 55-gallon drums

TABLE A (Continued)

Container Storage Areas

<u>Storage Area</u>	<u>Permitted Waste Streams</u>	<u>Permitted Waste Codes</u>	<u>Permitted Capacity</u>
Combustible Storage Area (Cont.)	Waste Mixed Solvents, Chlorinated	CR04	Max. of 4 330-gallon storage totes
Flammable Material Storage Area	Waste Mixed Solvents, Non-Chlorinated	CR04	880 gallons:
	Waste Mixed Solvents, Chlorinated	CR04	Max. of 16 55-gallon drums
	Acetone	CR04	
	Methanol	CR04	
Metal Hydroxide/ Sulfide Sludge Storage Area	Metal Hydroxide/ Sulfide Sludge	CR05	26 yd ³ : Max. of 1 26 yd ³ rolloff

TABLE B

Storage Tanks

<u>Tank #</u>	<u>Tank Description</u>	<u>Permitted Capacity</u>	<u>Permitted Waste Streams</u>	<u>Permitted Waste Codes</u>
1	Fiberglass Reinforced Plastic	8,000 gallons	Copper Etchant	CR04
2	Fiberglass Reinforced Plastic	8,000 gallons	Copper Etchant	CR04
3	Fiberglass Reinforced Plastic	8,000 gallons	Copper Etchant	CR04
4	Fiberglass Reinforced Plastic	5,000 gallons	Copper Etchant	CR04

TABLE CTreatment Tanks

<u>Tank #</u>	<u>Tank Description</u>	<u>Permitted Capacity</u>	<u>Permitted Waste Streams</u>	<u>Permitted Waste Codes</u>
5	Polyethylene; Cone-Bottom Settling Tank	3,000 gallons	Solder Stripper	CR04
6	Polyethylene; Electrolysis Tank	1,000 gallons	Solder Stripper	CR04
7	Polyethylene; Electrolysis Tank	1,000 gallons	Solder Stripper	CR04
8	Polyethylene; Copper Treatment Tank	1,500 gallons	Solder Stripper	CR04
8A	Polyethylene; Production Tank	1,500 gallons	Solder Stripper	CR04
9	Stainless Steel; Copper Reactor	3,800 gallons	Copper Etchant	CR04
10	Stainless Steel; Copper Reactor	5,000 gallons	Copper Etchant	CR04
10A	Stainless Steel; Copper Reactor (Proposed)	5,000 gallons	Copper Etchant	CR04

ATTACHMENT A

WASTE ANALYSIS PLAN

ATTACHMENT A

WASTE ANALYSIS PLAN

1. Waste Characterization

- a. Before the Permittee stores, recycles or disposes of 22a-454 waste received from off-site and generated on-site, the Permittee shall obtain a detailed chemical and physical analysis of a representative sample of the waste. A detailed chemical and physical analysis shall utilize one or more of the methods identified in Section 1.c. below. At a minimum, this analysis shall contain all the information which must be known to store, recycle or dispose of the waste in accordance with 22a-454 of the C.G.S.
- b. Waste characterization for wastes received from off-site, wastes generated on-site and other materials co-stored with the 22a-454 waste shall be conducted:
 - i. for the first time characterization of waste streams received from off-site and generated on-site;
 - ii. when the Permittee is notified, or has reason to believe, that the process or operation generating the waste has changed;
 - iii. when the Permittee suspects that the characteristics of the waste have changed;
 - iv. when the waste does not conform to the description on the generator waste certification package for off-site customers or the waste report for MacDermid's off-site facilities; and
 - v. annual re-characterization of both off-site wastes and wastes generated on-site.
- c. All wastes received from off-site and wastes generated on-site, and co-stored other materials which are managed in the permitted areas/units shall be characterized at a minimum, as specified in Section 1.d. below through manufacturer's information, process information, and/or laboratory analysis as described herein. For the purposes of this permit, the MacDermid Huntingdon Avenue facility shall be identified as the responsible party required to ensure that the waste and co-stored other material characterization is complete and accurate. Complete and accurate material characterization information shall be that which complies with the 22a-454 of the C.G.S. and the conditions of this permit.

i. Manufacturer Information

Data obtained from manufacturers identifying raw materials, products, or similar materials may be used when appropriate. This shall include, but is not limited to, material specifications and material safety data sheets (MSDS's) such that this data supports and documents the information required by the specified characterization parameters.

ii. Process Information

Knowledge of the process generating the waste may be used when appropriate. This includes published or documented data on the waste generating process or information documenting the generation of waste by similar processes. This data shall support and document the information required by the specified characterization parameters.

iii. Laboratory Analysis

If wastes cannot be properly or fully characterized through manufacturer information or process information as described above, then appropriate sampling and analytical procedures shall be conducted by qualified trained personnel in accordance with the methods and requirements in EPA Publication SW-846 (latest edition) or other methods approved by the DEP.

NOTE: The waste certification package for off-site customers and the waste report for off-site MacDermid facilities shall be completely filled out line by line. Refer to Appendix 1 of examples of the waste certification package and the waste report. The generator shall have knowledge of each data entry and all information included shall be verified by the MacDermid Huntingdon Avenue facility.

The waste characterization package information provided by the generator must accurately characterize chemical composition of the waste stream including, at a minimum, quantitative and/or descriptive data for each of the waste characterization parameters specified in Section 1.d. below, known health and/or environmental effects of the waste, and known hazards in handling or disposing of the waste (e.g., highly toxic and reactive components and hazard potential).

The Permittee shall require and maintain the necessary information which documents the data being provided. Records of all evaluations/analyses required in this section shall be retained in the facility operating record for at least three years, or until termination of a customer's contract, whichever is longest.

d. Waste Characterization Parameters.

Waste characterization parameters for the permitted wastes being managed at the facility are identified in Tables 1, 2, and 3. Tables 1, 2, and 3 identify the permitted wastes by waste stream categories, as shown below.

- o Table 1 Used surface finishing chemicals received from off-site (customers and MacDermid facilities) for recycling;
- o Table 2 Wastes received from MacDermid's 245 Freight Street facility;
- o Table 3 Wastes generated on-site.

For the permitted waste streams, the waste characterization parameters and allowable concentration ranges identified in the above referenced tables shall be utilized to properly characterize all wastes and shall be utilized to determine waste acceptance and rejection criteria. The Permittee shall follow Figure 1 "Flow Diagram for Accepting or Rejecting Used Surface Finishing Chemicals From Customers and Off-Site MacDermid Facilities". Only those wastes listed in the referenced tables which are determined to be within the allowable concentration ranges may be received from off-site or generated on-site and managed in the permitted storage or recycling units at the MacDermid, Huntingdon Avenue facility. The Permittee shall ensure that the special procedures identified below are complied with for the following wastes:

- i. For recyclable 22a-454 wastes received from off-site which fall into either of the categories identified in (A) or (B) below, the Permittee shall comply with the requirements identified herein.
 - (A) For wastes received from off-site customers for the first time;
 - (1) Collect a representative sample of the waste(s) to be received.
 - (2) Transport and submit samples in accordance with the instructions in MacDermid's generator certification package.
 - (3) Complete the generator certification package, see Appendix 1. A first time customer's wastes may only be shipped to the Huntingdon Avenue facility following completion and submittal of the generator certification package, and only after MacDermid, Inc. has complied with the waste characterization requirements and provides the generator with an acknowledgement of authorization for shipment to the facility.

Only the waste streams indicated in Table 1, which are determined to be within the allowable concentration ranges shall be shipped to the facility. A properly completed manifest shall accompany each shipment of waste.

- (4) Following this initial waste characterization, each shipment, of an off-site customers waste received at the Permittees facility need only be spot tested in accordance with Section 2 unless the conditions identified in Section 1.b. require waste re-characterization.
- (B) For subsequent shipments of waste from off-site customers, or for wastes received from off-site MacDermid facilities (other than 245 Freight Street), for recycling at Huntingdon Avenue the requirements identified below shall be complied with. [Note: Any of several off-site MacDermid facilities may act as a transfer facility or a transporter for wastes being sent to the Huntingdon Avenue facility and may be designated as either an off-site facility or an off-site generator.]
 - (1) The MacDermid Huntingdon Avenue facility shall arrange for shipment of the wastes identified in Table 1 with the generator (the off-site generator or off-site MacDermid facility) of the waste. The arrangements shall identify each waste to be shipped and ensure that the waste constituents and the allowable concentration ranges are within the parameter values allowed at the Huntingdon Avenue facility. Final approval for waste shipment shall be coordinated by the Huntingdon Avenue facility prior to any waste shipment to Huntingdon Avenue.
 - (2) The off-site customer or off-site MacDermid facility shall then ship the pre-approved waste to Huntingdon Avenue. A properly completed manifest shall accompany each shipment of waste.
 - (3) Upon receipt of wastes from off-site the MacDermid Huntingdon Avenue facility shall perform spot testing in accordance with Section 2 of this Attachment.
- ii. For wastes received from MacDermid's 245 Freight Street facility;
 - (A) The generating department at MacDermid's 245 Freight Street facility shall have each shipment of waste analyzed for the constituents listed in Table 2.

- (B) The generating department at 245 Freight Street shall submit this data, and any other information required by the compliance administrator in the form of a completed waste report. This report shall accompany each shipment of waste received at the Huntingdon Avenue facility and must be retained in the operating record for a period of at least three years. Examples of such report forms have been included as Appendix 1 of this Attachment.
 - (C) Only the waste streams indicated in Table 2, which are within the allowable concentration ranges shall be received and accepted from MacDermid's 245 Freight Street facility. A properly completed manifest shall accompany each shipment of waste.
- iii. For the following wastes generated on-site;
- (A) Used surface finishing chemicals, off-specification surface finishing chemicals and surface finishing chemicals otherwise rendered unfit for sale to customers:
 - (1) An internal waste tracking system shall be utilized to ensure proper waste characterization and allow for waste transfer from the generating department or area to the on-site permitted storage or management area. See Appendix 2 for an explanation of the internal tracking system for on-site generated wastes. Each volume of the waste surface finishing chemicals which will be recycled on-site or which will be stored on-site pending off-site disposal, shall be characterized in accordance with Section 1.c. for the waste constituents and allowable concentration ranges identified in Table 3.
 - (2) Any volume of waste which does not meet the specifications of Table 3, shall not be stored or recycled at the Permittees facility and must be sent off-site to a permitted hazardous waste facility within 90 days of generation.
 - (B) Hazardous wastes generated on-site, other than waste surface finishing chemicals:
 - (1) An internal waste tracking system shall be utilized to ensure proper waste characterization and allow for waste transfer from the generating department or area to the on-site permitted storage or management area. See Appendix 2 for an explanation of the internal tracking system for on-site generated wastes. Each volume of waste which will be recycled on-site or which will be stored on-site pending off-site disposal shall be characterized in accordance with Section 1.c. for the waste constituents and allowable concentration ranges identified in Table 3.

- (2) Any volume of waste which does not meet the specifications of Table 3 may not be stored or recycled at the Permittee's facility and must be sent off-site to a permitted hazardous waste facility within 90 days of generation.
- e. Analytical methods and other appropriate sampling methods shall be used to conduct the analyses specified in Sections 1 and 2 of this attachment. Approved methods which may be used to conduct the analyses specified in Sections 1 and 2 of this Waste Analysis Plan include those specified in "Test Methods for Evaluating Solid Waste; Physical/Chemical Methods", EPA Publication SW-846 (November, 1986 or as revised); methods approved in the codification of 40 CFR Part 260.11; and methods prescribed by Standard Methods for the Examination of Water and Wastewater (SM); or other DEP or EPA approved methods.
- i. The following are the SW-846 analytical methods for use in complying with the requirements of this permit.

<u>Parameter</u>	<u>Analytical Method</u>
Aluminum	7020
Arsenic	7060
Cadmium	7130
Chloride	9251
Chromium	7190
Copper	7210
Iron	7380
Lead	7420
Nickel	7520
Palladium	3010/6010
Tin	7870
Mercury	7470
Zinc	7950
Acetone	8240
Chlorobenzene	8010
Cyclohexanone	8240
Ethyl Acetate	8240
Ethyl Benzene	8020
Ethyl Ether	8015
Isobutanol	8015
Methanol	8240
Methyl Ethyl Ketone	8015
Methyl Isobutyl Ketone	8015
Methylene Chloride	8010
N-Butyl Alcohol	8015

<u>Parameter</u>	<u>Analytical Method</u>
Tetrachloroethylene	8010
Toluene	8020
1,1,1-Trichloroethane	8010
Trichloroethylene	8010
1,1,2-Trichloro- 1,2,2-Trifluoroethane	8010
Xylene	8020
EPA Method 8010 Chlorinated Hydrocarbons	8010
pH	9049
Flash Point	1010

- ii. The following are additional analytical methods allowed by this permit.

<u>Parameter</u>	<u>Source/Method</u>
Fluoride	Method 413, <u>Standard Methods for the Examination of Water and Wastewater</u> , 1985 edition (or as revised), American Water Works Association.

- f. The following methods shall be used when conducting the sampling specified in this permit:

Sampling Methods

<u>WASTE TYPE</u>	<u>SAMPLING DEVICE</u>
Free-flowing liquids (Drums or storage totes)	Coliwas
Sludges (Roll-off Dumpsters)	Trier
Free-flowing liquids Truck tankers)	Weighted Bottle, Bailer
Sludges	Glass or Metal Sampling Tube

Coliwasa, trier, and tube samplers shall be selected with lengths capable of obtaining representative samples of wastes throughout the entire depth of the container or tank. The above sampling methods shall be performed as described in SW-846, "Test Methods for Evaluating Solid Waste; Physical/Chemical Methods", November 1986 or as revised. Any samples which will not be immediately analyzed must be containerized and preserved in accordance with the methods specified in Table 5 (by reference to SW-846) or as required in the specific approved test method being utilized.

The Permittee shall maintain a laboratory analysis quality assurance/quality control plan for the on-site analysis of 22a-454 wastes. The permittee shall utilize only Connecticut Health Department or EPA certified laboratories, whichever may be required, for all samples not analyzed on-site. Sampling of wastes (used surface finishing chemicals) received from off-site customers and off-site MacDermid facilities (excluding 245 Freight Street) shall be performed for each shipment of waste received at the Huntingdon Avenue facility. Wastes received from 245 Freight Street do not require on-site sampling for waste characterization and waste verification. Wastes characterization for these wastes shall be conducted at 245 Freight Street prior to each shipment, and a paperwork review shall be performed at Huntingdon Avenue upon receipt to ensure that the wastes are capable of being accepted at the Huntingdon Avenue facility. All sampling, where applicable, shall be performed on each container and for each tank truck received from off-site. With tank truck shipment of hazardous waste, each compartment of the tank truck shall be sampled whenever:

- i. compartments contain different waste streams; or,
- ii. compartments contain the same waste streams, but were collected from different facilities.

2) Waste Verification (Evaluation/Spot Testing)

- a. In addition to initial waste characterization, waste verification, as outlined below shall be employed as a secondary check of waste identity for shipments of wastes received from off-site and wastes generated on-site. Wastes received from off-site or generated on-site which do not have the characterization/verification parameters defined as indicated in Sections 1.d and 2 shall not be accepted, treated, stored, recycled or otherwise managed in any of the permitted 22a-454 waste management areas.

- i. Used surface finishing wastes received from off-site customers, generated on-site or received from off-site MacDermid facilities which will or may be recycled at the Huntingdon Avenue facility are identified in Table 4 of this attachment. Table 4 identifies the waste verification (spot test) parameters which shall be evaluated and the allowable parameter specifications for recyclable wastes which may be accepted at the Huntingdon Avenue facility. Waste verification (spot testing) shall be conducted as specified in Appendix 3 of this Attachment.
- ii. Wastes received from MacDermid's 245 Freight Street facility do not require spot testing when received at Huntingdon Avenue as these wastes are characterized by 245 Freight Street prior to each shipment. The waste characterization data in accordance with Table 2 shall be included with each shipment of waste received at Huntingdon Avenue and shall be reviewed upon receipt to ensure compliance with the facility permit. Wastes which do not meet the allowable parameter specifications identified in Table 2 shall not be accepted and must be returned to the 245 Freight Street facility.
- iii. Used surface finishing wastes generated on-site shall be spot tested prior to their being placed into the permitted units or areas. Used surface finishing wastes shall be spot tested for the parameters identified in Table 4. Used surface finishing wastes which do not meet the specifications indicated in Table 4 shall be tested for the appropriate Table 3 parameters. If the waste does not conform with the specifications in Table 3, it shall not be accepted for storage in any of the permitted units and shall be shipped off-site to a permitted hazardous waste facility within 90 days of generation. Also, the use of an internal tracking system shall be required for all wastes generated on-site to ensure that the waste, the container labeling and the accompanying paperwork are accurate and complete for the purposes of complying with the terms and conditions of this permit. A description of the internal tracking system which shall be used for on-site generated waste is included in Appendix 2 of this Attachment.

Only those wastes listed in Tables 1, 2, 3 and 4 which are determined to be within the allowable concentration ranges may be managed in the permitted units and areas for storage or recycling at the MacDermid, Huntingdon Avenue facility.

- b. Prior to the transfer or the bulking of a waste stream into a storage, recycling or other waste management unit or area, the Permittee shall verify the waste in the receiving unit, or area in accordance with the procedures identified in Appendix 3 of the Waste Analysis Plan and confirm that the contents are as indicated and that the materials are compatible with the materials to be transferred. See also Section 4 regarding compatibility testing.

- c. All wastes received from off-site via MacDermid vehicles shall be evaluated/spot tested in accordance with the requirements of this section within 48 hours of receipt or re-characterized in accordance with Section 1.d. within 72 hours of receipt and either accepted or rejected. All tank truck and container shipments of used surface finishing chemicals arriving from off-site via non-MacDermid vehicles shall be evaluated/spot tested in accordance with the requirements of this section within 6 hours of receipt. Any wastes which fail the spot tests shall, within this time period, be rejected or further tested in accordance with Section 1.d. and subsequently be accepted or rejected in accordance with the specification parameters identified in Table 1.
- d. Records of all evaluations/analyses required in this section shall be retained in the facility operating record for a period of at least three years.

3. Characterization of Spills

- a. Spill residues from known sources shall be evaluated/analyzed for the appropriate parameters referenced in Section 1.d. The results from these evaluations/analyses shall be used to characterize the spill residues.
- b. Spill residues from unknown sources shall be evaluated/analyzed for all the parameters referenced in Section 1.d. to identify the waste, determine the proper waste management and compatibility group and ensure that sufficient information is obtained for proper storage, recycling or disposal of the waste. If the material is not permitted to be managed at the facility, the material shall not be managed in the permitted units or areas and shall be shipped off-site to a permitted facility within 90 days.

4. Compatibility Testing

- a. 22a-454 wastes or co-stored other materials in the permitted areas or units must be fully characterized and verified in accordance with Sections 1 and 2 of this Waste Analysis Plan. 22a-454 waste or co-stored other materials already characterized do not need to be re-characterized unless any of the conditions stated in Section 1.b. of this attachment apply.
- b. Using, at a minimum, the procedures specified in Section 4.d. below, the Permittee shall;
 - i. determine the compatibility of each waste with each other waste or co-stored other material with which it may be stored, recycled or managed;

- ii. determine the compatibility of each waste with the physical structures it may come in contact with while in storage; and
 - iii. determine the compatibility of each waste with the container or tank unit in which it may be stored or managed.
- c. A waste is considered incompatible with another waste or co-stored other material, if, upon mixing or contact, a reaction may occur which:
- i. generates excessive heat or pressure, fire or explosion, or violent reactions;
 - ii. produces toxic mists, fumes, dusts, or gases in sufficient quantities to threaten human health or the environment;
 - iii. produces flammable fumes or gases in sufficient quantities to pose a risk of fire or explosion;
 - iv. damages the structural integrity in its container, containment structure, or any other structure or equipment required by this permit; or
 - v. through other like means, threatens human health or the environment.
- d. The Permittee shall assess incompatibility of wastes and co-stored other materials as follows:
- i. For each waste stream to be accepted from off-site or generated on-site which is to be stored, recycled or otherwise managed on-site, assign a Reactivity Group Number (RGN) to each chemical constituent present in the waste stream and conduct the compatibility assessment in accordance with "A Method for Determining the Compatibility of Hazardous Wastes", EPA Document EPA-600/2-80-076. NOTE: When it is known by material knowledge, manufacturer information, process knowledge, and/or evaluation/laboratory analysis that a mixture does not exhibit the reactivity associated with a particular RGN for the given waste, that RGN will not apply to the waste; however, verification documentation must be maintained in the facility operating record.
 - ii. Using knowledge of the presence of each chemical constituent within a waste, their RGNs, and considering the concentration of the constituents, their physical state, the medium in which they exist, the presence of other chemical constituents, and other relevant factors, including those listed in Sections 4.a., b., and c. above, compare all the likely RGNs for a waste stream or co-stored other material with the RGNs allowed in a storage or management group or area. Then select compatible storage locations or waste management unit from among the permitted waste management areas utilizing Table 6, "ALLOWABLE WASTE STORAGE LOCATIONS, CONTAINER TYPES, AND HAZARD CLASSES" for proper (segregated) waste storage.

- iii. Any two wastes or materials which yield RGN pairs indicating an incompatible reaction, shall be considered incompatible, unless actual documented compatibility tests demonstrate that the wastes in question are, in fact, compatible.
- iv. For wastes or co-stored other materials having RGN pairs which indicate a reaction due to incompatibility, laboratory tests may be performed in accordance with the following example to further assess the extent and degree of an incompatible reaction. Example: while conducting the following procedures under a fume hood, a small (i.e., 5 ml) quantity of each material should be mixed first to safely determine if a highly vigorous or otherwise potentially hazardous reaction occurs. If the observed reaction is not highly vigorous, a larger quantity (i.e., at least 500 ml) of each of the materials should be thoroughly mixed and allowed to stand for a period of time (e.g., 15 minutes), the reactions observed and the results analyzed. If compatibility tests do not result in an incompatible reaction as defined in Section 4.c. above, the Permittee may at the Permittee's discretion, consider the substances compatible. If an incompatible reaction is observed, as defined in Section 4.c. above, the materials shall be considered incompatible.
- v. Laboratory results and observations used to confirm any findings of compatibility or incompatibility for any wastes or co-stored other materials shall be retained in the operating record for the term of the permit.

5. Degree of Hazard Determination

Prior to placing into storage, wastes or other materials, the Permittee shall determine the degree of hazard for each material to be stored in the permitted 22a-454 waste storage area. The degree of hazard for each material shall be determined as follows:

- a. Obtain the applicable degree of hazard and/or hazard class rating for each material, as may be identified in NFPA 704, NFPA 325M, NFPA 49, NFPA 43A, NFPA 43B, NFPA 43C or by means of an alternate method for assessing hazards as approved by the DEP, (e.g., using the "Hazardous Materials Identification System", HMIS). For mixtures containing two or more chemicals the Permittee shall conduct one of the following:
 - i. The degrees of hazard for each chemical constituent shall be determined. The mixture shall then be assigned the degrees of hazard which represent the most severe degrees of hazard associated with the chemical constituents within the mixture. When a chemical constituent does not have a degree of hazard rating, the Permittee shall assign one using either the NFPA 704 quantitative or qualitative determination or by another DEP approved method.

The selection and assignment of the degrees of hazard shall clearly document the Permittees evaluation/analysis. (Note: the NFPA 704 criteria for qualitative information shall be deemed appropriate when quantitative information is unavailable or inadequate); or

- ii. The degrees of hazard for the entire mixture may be assigned provided the Permittee can determine and document the principal hazards of the mixture. The method to be used to provide the degrees of hazard for the mixture shall be as outlined in NFPA 704 (e.g., the quantitative or qualitative method, where qualitative information shall be deemed appropriate when quantitative information is unavailable or inadequate) or by the alternate DEP-approved method such as the HMIS.

- b. All information used to make the determination must be clearly documented and maintained in the operating record until closure of the facility.

6. Other Materials Requirements

- a. Before the Permittee treats, stores or manages any co-stored other material in the permitted storage or management areas, he/she shall obtain a detailed chemical and physical analysis of a representative sample of the co-stored other material. At a minimum, this analysis shall contain all the information which must be known to store, or manage the co-stored other material in accordance with the terms and conditions of this permit. The Permittee shall conduct the co-stored other material characterization in accordance with Sections 1.b. or 1.c., above. Documentation of all co-stored other material characterizations shall be retained in the operating record for at least three years.
- b. The following criteria shall be utilized to characterize co-stored other materials prior to their being stored or managed in the permitted hazardous waste areas.
 - i. Chemical name/Primary chemical Constituents;
 - ii. Compatibility Determination (see Section 4); and
 - iii. Degree of Hazard Determination (see Section 5).

TABLE 1

USED SURFACE FINISHING CHEMICALS RECEIVED
FROM CUSTOMERS OR OFF-SITE MACDERMID FACILITIES FOR RECYCLING

EPA Hazardous Waste Number/CT Regulated Waste Number	Material Description	Waste Constituent	Allowable Conc. Range ⁴	Hazard	Handling Method
CR04/(D002/D004/D007/ D008)	Copper Etchant	Water ²	Balance	Corrosive Toxic	S01 & S02
		Ammonia ²	40-200 g/l		
		Chloride ²	100-250 g/l		
		Copper	0-200,000 ppm		
		Zinc	0-2,000 ppm		
		Tin	0-200 ppm		
		Lead	5-200 ppm		
		Iron	0-30 ppm		
		Nickel	0-20 ppm		
		pH	8-10		
		Arsenci	5-100		
		Chromium	5-200		
		Chlorinated			
		Hydrocarbons			
			Non-detect (EPA SW-846 method 8010)		
CR04/(D002/D008) ⁵	Solder ¹ Conditioner	Water ²	500-850 g/l	Corrosive Toxic	S01
		Ammonium Chloride ²	60-200 g/l		
		Hydrochloric Acid ²	80-175 g/l		
		Fluoride	0-20 ppm		
		Copper	0-3,000 ppm		
		Iron	0-500 ppm		
		pH	≤2.0		
		Lead	5-200 ppm		
		Chlorinated			
		Hydrocarbons			
			Non-detect (EPA SW-846 method 8010)		

TABLE 1 (continued)

USED SURFACE FINISHING CHEMICALS RECEIVED
FROM CUSTOMERS OR OFF-SITE MACDERMID FACILITIES FOR RECYCLING

EPA Hazardous Waste Number/CT Regulated Waste Number	Material Description	Waste Constituent	Allowable Conc. Range ⁴	Hazard	Handling Method
CR04/(D001/D002/D008) ⁵ Solder ^a Stripper		Water ²	Balance	Ignitable	S01
		Hydrogen Peroxide ²	0-190 g/l	Corrosive	
		Ammonium Bifluoride ²	90-300 g/l	Toxic	
		Chloride	0-1,000 ppm		
		Copper	0-8,000 ppm		
		Tin	2,000-75,000 ppm		
		Lead (soluble)	5-100 ppm		
		Iron	0-200 ppm		
		Nickel	0-20 ppm		
		pH	3.5 to 6		
		Chlorinated Hydrocarbons	Non-detect (EPA SW-846 method 8010)		
CR04	NMP	Water ² NMP ²	0-155 g/l	Toxic	S01
		Chloride	850-1,050 g/l		
		Copper	0-250		
		Chlorinated Hydrocarbons	0-250		
			Non-detect (EPA SW-846 method 8010)		

TABLE 1 (continued)

USED SURFACE FINISHING CHEMICALS RECEIVED
FROM CUSTOMERS OR OFF-SITE MACDERMID FACILITIES FOR RECYCLING

EPA Hazardous Waste Number/CT Regulated Waste Number	Material Description	Waste Constituent	Allowable Conc. Range ⁴	Hazard	Handling Method
CR04	Electroless ¹ Copper	Water ² Sodium Hydroxide ² Formaldehyde ² Chealator (EDTA) ² Copper Nickel TOX Chloronated Hydrocarbons	500-1,000 g/l 0-40 g/l 0-15 g/l .5-30 g/l 0-50,000 ppm 0-20 ppm 0-10 ppm Non-detect (EPA SW-846 Method 8010)	Toxic	S01

^a Note: Meets the definition of an oxidizer and, therefore, is also defined as a D001 hazardous waste.

¹ Solder Conditioner and Electroless Copper are not currently recycled at the Huntingdon Avenue facility. These materials are stored on-site only.

² These constituents which are the major components of the raw products will not be analyzed for when waste shipments are received. They have been provided solely for the purpose to determine compatibility with other waste streams.

³ Meets the definition of corrosivity listed under 40 CFR 261.22 (a)(2).

⁴ The used surface finishing chemicals received from customers are generated almost exclusively from printed circuit manufacturing facilities. Printed circuit manufacturing facilities do not use cyanide plating baths, therefore, cyanide has not been listed under the column "Waste Constituent".

⁵ These materials also meet the definition of RCRA hazardous wastes, and as such are fully regulated under the hazardous waste permit EPA I.D. No. CTD001164599. They are included here solely for the purpose of complying with the requirements of C.G.S. Section 22a-454 which requires the issuance of a permit for the commercial storage and treatment of these materials.

TABLE 2

DESCRIPTION OF WASTES RECEIVED
FROM MACDERMID'S 245 FREIGHT STREET FACILITY

EPA Hazardous Waste Number/CT Regulated Waste Number	Material Description	Waste Constituent	Allowable Conc. Range	Hazard	Handling Method
CR04	Electroless ¹ Copper	Water ² Sodium Hydroxide ² Formulalehyde ² Chelator (EDTA) ² Copper Nickel	500-1,100 g/l 0-40 g/l 0-15 g/l .5-30 g/l 0-50,000 ppm 0-20 ppm	Toxic	S01
CR04/(D002) ³	Stannous Sulfate Solution	Water ¹ Tin pH	Balance 1-10% ≤2.0	Toxic Corrosive	S01
CR04/(D002) ³	Chelated Waste Cleaner	Water ¹ Copper EDTA pH	Balance 1-20 g/l 1-25% ≤2.0	Toxic Corrosive	S01
CR04/(D002) ³	Palladium Solution	Water ² Palladium pH	Balance 0-100,000 ppm ≤2.0	Toxic Corrosive	S01
CR04	Palladium Solution	Water ² Palladium pH	Balance 0-100,000 ppm >2.0 - 6.0	Toxic Corrosive	S01

TABLE 2 (continued)

DESCRIPTION OF WASTES RECEIVED
FROM MACDERMID'S 245 FREIGHT STREET FACILITY

EPA Hazardous Waste Number/CT Regulated Waste Number	Material Description	Waste Constituent	Allowable Conc. Range	Hazard	Handling Method
CR04/(D002) ³	Waste Nickel Solution	Water ² Nickel ² Lead pH	Balance 0-15,000 ppm 0-4 ppm ≤2.0	Toxic Corrosive	S01
CR04	Waste Nickel Solution	Water ² Nickel ² Lead pH	Balance 0-15,000 ppm 0-4 ppm >2.0-6.0	Toxic Corrosive	S01
CR04/(D002) ³	Acid Zinc Solution	Water ² Zinc pH	Balance 0-50,000 ppm ≤2.0-6.0	Toxic Corrosive	S01
CR04	Acid Zinc Solution	Water ² Zinc pH	Balance 0-50,000 ppm >2.0-6.0	Toxic Corrosive	S01
CR04/(D002/D006) ³	Cadmium Plating Solution	Water ¹ Cadmium pH	Balance 1-500,000 ppm 1-5	Toxic Corrosive	S01
CR04/(D002) ³	Acid Copper Solution	Water ² Copper pH	Balance 0-100,000 ppm ≤2.0	Toxic Corrosive	S01

TABLE 2 (continued)

DESCRIPTION OF WASTES RECEIVED
FROM MACDERMID'S 245 FREIGHT STREET FACILITY

EPA Hazardous Waste Number/CT Regulated Waste Number	Material Description	Waste Constituent	Allowable Conc. Range	Hazard	Handling Method
CR04	Acid Copper Solution	Water ² Copper pH	Balance 0-100,000 ppm >2.0-6.0	Toxic Corrosive	S01
CR04/ ₃ D001/D002/F003/ F005)	Waste Mixed Sols. (Non-Chlorinated)	Flash Point pH ² Water ² Xylene Ethyl Acetate Ethyl Benzene Ethyl Ether Methyl Isobutyl Ketone n-Butyl Alcohol Cyclohexanone Methanol Toluene Methyl Ethyl Ketone Isobutanol	>50° F 1-8 Balance This waste stream will be a mixture of these constituents, therefore, allowable concentration ranges do not apply	Ignitable Toxic Corrosive	S01

TABLE 2 (continued)

DESCRIPTION OF WASTES RECEIVED
FROM MACDERMID'S 245 FREIGHT STREET FACILITY

EPA Hazardous Waste Number/CT Regulated Waste Number	Material Description	Waste Constituent	Allowable Conc. Range	Hazard	Handling Method
CR04/(D001/D002/ F002) ³	Waste Mixed Sols. (Chlorinated)	Water ² Flash Point PH Tetrachloroethylene Trichloroethylene 1,1,1-Trichloroethane Chlorobenzene 1,1,2-Trichloro-1,2,2, Trifluoroethane	Balance ≥100°F 4-10 This waste stream will be a mixture of these constituents, therefore, allowable concentration ranges do not apply	Ignitable Toxic Corrosive	S01
CR04	Zinc/Cobalt chloride Solution		Water ² Balance Zinc 1-10% Cobalt 1-10% pH >2-9	Toxic	S01
CR04/(D009) ³	Lab. Apparatus	Mercury	≥0.2 ppm	Toxic	S01

- 1 Electroless Copper is not currently recycled at the Huntington Avenue facility. This material is stored on-site only.
- 2 These constituents which are the major components of the raw products will not be analyzed for when waste shipments are received. They have been provided solely for the purpose to determine compatibility with other waste streams.
- 3 These materials also meet the definition of RCRA hazardous wastes, and as such are fully regulated under the hazardous waste permit EPA I.D. No. CTD001164599. They are included here solely for the purpose of complying with the requirements of C.G.S. Section 22a-454 which requires the issuance of a permit for the commercial storage and treatment of these materials.

TABLE 3

DESCRIPTION OF WASTES GENERATED ON-SITE

EPA Hazardous Waste Number/CT Regulated Waste Number	Material Description	Waste Constituent	Allowable Conc. Range	Hazard	Handling Method
CR04/(D002/D004/ D007/D008)	Copper Etchant	Water ²	40-200 g/l	Toxic	
		Ammonia ²	100-250 g/l		
		Chloride	0-200,000 ppm		
		Copper	0-2,000 ppm		
		Zinc	0-200 ppm		
		Tin	5-200 ppm		
		Lead	0-30 ppm		
		Iron	0-20 ppm		
		Nickel	8-10		
		pH	5-100		
		Arsenic	5-200		
		Chromium			
CR04/(D002/D008) ⁴	Solder ¹ Conditioner	Water ²	500-850 g/l	Corrosive Toxic	S01
		Ammonium Chloride ²	60-200 g/l		
		Hydrochloric Acid ²	80-175 g/l		
		Fluoride	0-20 ppm		
		Copper	0-3,000 ppm		
		Iron	0-500 ppm		
		pH	≤2.0		
		Lead	5-200 ppm		
CR04	NMP	Water ²	0-155 g/l	Toxic	S01
		NMP ²	850-1,050 g/l		
		Chloride	0-250		
		Copper	0-250		

TABLE 3 (continued)

DESCRIPTION OF WASTES GENERATED ON-SITE

EPA Hazardous Waste Number/CT Regulated Waste Number	Material Description	Waste Constituent	Allowable Conc. Range	Hazard	Handling Method
CR04/(D001/D002/D008) ⁴ Solder ^a Stripper		Water ²	Balance	Ignitable	S01
		Hydrogen Peroxide ²	0-190 g/l	Corrosive	
		Ammonium Bifluoride ²	90-300 g/l	Toxic	
		Chloride	0-1,000 ppm		
		Copper	0-8,000 ppm		
		Tin	2,000-75,000 ppm		
		Lead (soluble)	5-100 ppm		
		Iron	0-200 ppm		
		Nickel	0-20 ppm		
		pH	3.5 to 6.0		
CR04	Electroless Copper	Water ²	500-1,000 g/l		
		Sodium Hydroxide ²	0-40 g/l		
		Formaldehyde ²	0-15 g/l		
		Chelated(EDTA) ²	.5-30 g/l		
		Copper	0-50,000 ppm		
		Nickel	0-20 ppm		
CR04/(D002) ⁴	Acid Zinc Solution	Water ²	Balance	Toxic	S01
		Zinc pH	0-50,000 ppm ≤2.0	Corrosive	
CR04	Acid Zinc Solution	Water ²	Balance	Toxic	S01
		Zinc pH	0-50,000 ppm >2.0-6.0	Corrosive	

TABLE 3 (continued)

DESCRIPTION OF WASTES GENERATED ON-SITE

EPA Hazardous Waste Number/CT Regulated Waste Number	Material Description	Waste Constituent	Allowable Conc. Range	Hazard	Handling Method
CR04/(D002) ⁴	Acid Copper Solution	Water ² Copper pH	Balance 0-100,000 ppm ≤2.0	Toxic Corrosive	S01
CR04	Acid Copper Solution	Water ² Copper pH	Balance 0-100,000 ppm >2.0-6.0	Toxic Corrosive	S01
CR04/(U154/D001) ⁴	Methanol	Water ² Methanol	Balance 500,000-1,000,000 ppm	Ignitable	S01
CR04/(U002/D001) ⁴	Acetone	Water ² Acetone	Balance 500,000-1,000,000 ppm	Ignitable	S01
CR04/(D002) ⁴	Chelated Waste Cleaner	Water ² Copper EDTA pH	Balance 1-20 g/l 1-25% ≤2.0	Toxic Corrosive	S01
CR04/(D002) ⁴	Stannous Sulfate Solution	Water ² Tin pH	Balance 1-10% ≤2.0	Toxic Corrosive	S01

DESCRIPTION OF WASTES GENERATED ON-SITE

EPA Hazardous Waste Number/CT Regulated Waste Number	Material Description	Waste Constituent	Allowable Conc. Range	Hazard	Handling Method
CR04/(D001/D002/F003/ F005)	Waste Mixed Solvents (Non-Chlorinated)	Water ²	Balance	Ignitable	S01
		Flash Point	≥50°F	Toxic	
		pH	1-8	Corrosive	
		Xylene	This waste stream will		
		Ethyl Acetate	be a mixture of these		
		Ethyl Benzene	constituents, therefore,		
		Ethyl Ether	allowable concentration		
		Methyl Isobutyl Ketone	ranges do not apply		
		n-Butyl Alcohol			
		Cyclohexanone			
		Methanol			
		Toluene			
		Methyl Ethyl Ketone			
		Isobutanol			
CR04/(D001/D002/F002) ⁴	Waste Mixed Solvents (Chlorinated)	Water	Balance	Ignitable	S01
		Flash Point	≥100°F	Toxic	
		pH	1-8	Corrosive	
		Tetrachloroethylene	This waste stream will		
		Trichloroethylene	be a mixture of these		
		1,1,1-Trichloroethane	constituents, therefore,		
		Chlorobenzene	allowable concentration		
		1,1,2-Trichloro-1,2,2,	ranges do not apply.		
		Trifluoroethane			

TABLE 3 (continued)

DESCRIPTION OF WASTES GENERATED ON-SITE

EPA Hazardous Waste Number/CT Regulated Waste Number	Material Description	Waste Constituent	Allowable Conc. Range	Hazard	Handling Method
CR05/(F006) ⁴	Metal Hydroxide/ Sulfide Sludge	Copper	10-30Z	Toxic	S01
		Iron	.5-10Z		
		Aluminum	.1-8Z		
		Chromium	0-8Z		
		Zinc	.1-2Z		
		Tin	0-1Z		
		Lead	0-2Z		
		Sulfur	4-12Z		
		Fluoride	0-1Z		
CR04/(D002) ⁴	Waste Nickel Solution	Water	0-55Z	Toxic Corrosive	S01
		Water ²	Balance		
		Nickel pH	0-100 g/l ≤2.0		
CR04	Waste Nickel Solution	Water ²	Balance	Toxic Corrosive	S01
		Nickel pH	0-100 g/l >2.0-6.0		
CR04/CR05/(D008) ⁴	Lead Fluoride Sludge	Lead	5-1,000 g/l	Toxic	S01
		Tin pH	0-500 g/l 5-12		
CR04/(D002/D006) ⁴	Cadmium Plating Solution	Water ²	Balance	Toxic Corrosive	S01
		Cadmium pH	1-500,000 ppm 1-5		

TABLE 3 (continued)

DESCRIPTION OF WASTES GENERATED ON-SITE

EPA Hazardous Waste Number/CT Regulated Waste Number	Material Description	Waste Constituent	Allowable Conc. Range	Hazard	Handling Method
CR04	Zinc/Cobalt Chloride Solution	Water ² Zinc Cobalt pH	Balance 1-10% 1-10% >2-9	Toxic	S01
CR02/(D001) ⁴	Vacuum Pump Oil/ Inks	Flash Point	≤140°F	Ignitable	S01
CR02	Vacuum Pump Oil/ Inks	Flash Point	>140°F	Ignitable	S01
CR04/(D009) ⁴	Laboratory Apparatus	Mercury	≥0.2 ppm	Toxic	S01

^a Note: meets the definition of an ignitable waste (D001) due to the presence of the oxidizer hydrogen peroxide.

¹ Solder Conditioner and Electroless Copper are not currently recycled at the Huntingdon Avenue facility. These materials are stored on-site only.

² These constituents which are the major components of the raw products will not be analyzed for when waste shipments are received. They have been provided solely for the purpose to determine compatibility with other waste streams.

³ Meets the definition of corrosivity of corrosivity listed under 40 CFR 261.22(a)(2).

⁴ These materials also meet the definition of RCRA hazardous wastes, and as such are fully regulated under the hazardous waste permit EPA I.D. No. CTD001164599. They are included here solely for the purpose of complying with the requirements of C.G.S. Section 22a-454 which requires the issuance of a permit for the commercial storage and treatment of these materials.

TABLE 4
SPOT TESTS FOR USED SURFACE FINISHING CHEMICALS

MacDermid Waste Stream	Parameter	Allowable Specification
Copper Etchant	Appearance	Deep blue homogeneous liquid at 75°F
	Specific Gravity Ammonia (Free)	1.13 minimum at 75°F Positive
Solder Conditioner	Appearance	Yellow to water white homogenous liquid at 75°F
	pH	<3.0
	Ammonia (Liberated)	Positive
NMP	Appearance	Light yellow to dark brown, clear liquid with no phase separation
	Specific Gravity	1.017 to 1.037
	Refraction Index	1.4610-1.4690
Solder Stripper	Appearance	Light brown or blue to blue green (not green) homogeneous liquid at 75°F
	pH	3.5 to 6.0
	Ammonia (Free) Ammonia (Liberated)	Negative Positive
Electroless Copper	Appearance	Light blue, homogeneous liquid at 75°F
	pH Ammonia (Liberated)	5-7 Negative

TABLE 5

COLLECTION/SAMPLE PRESERVATION REQUIREMENTS

MacDermid, Inc.
526 Huntingdon Avenue
Waterbury, Connecticut

<u>Parameter</u>	<u>Container</u>	<u>Preservation</u>
Metals	Plastic or Glass	HNO ₃ to pH <2
pH	Plastic or Glass	Cool to 4°C
Flash Point	Plastic or Glass	Cool to 4°C
Volatile Organic Compounds	Glass w/Teflon Seal	Cool to 4°C Sodium Thiosulfate
Chloride	Plastic or Glass	Cool to 4°C
Fluoride	Plastic	None Required
Ammonia	Plastic or Glass	H ₂ SO ₄ to pH <2 Cool to 4°C
Sulfide	Plastic or Glass	Zinc Acetate Cool to 4°C
Cyanide	Plastic or Glass	NaOH to pH >12 0.6 g ascorbic acid Cool to 4°C

Table 6

ALLOWABLE WASTE STORAGE LOCATIONS,
CONTAINER TYPES, AND
HAZARD CLASSES

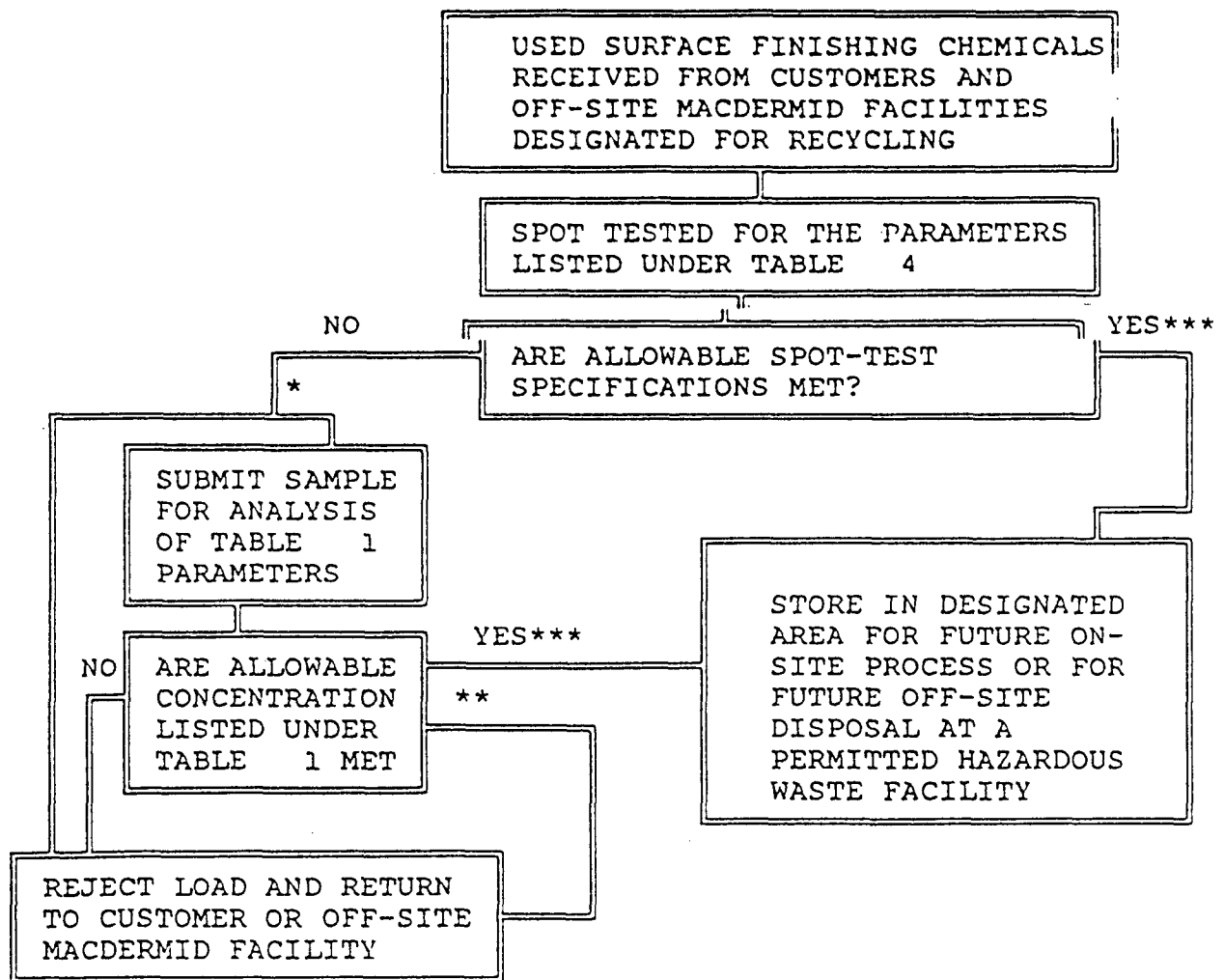
<u>Storage Area</u>	<u>Waste Stream</u>	<u>Container Type*</u>	<u>Hazard Class</u>
Main Container Storage Area And QC Area (Waste Staging Area)	Copper Etchant	A, B	Corrosive
	Solder Conditioner	A	Corrosive
	Solder Stripper	A	Corrosive
	Acid Zinc Soln.	A	Corrosive
	Acid Copper Soln.	A	Corrosive
	Cadmium Plating Soln.	A	Corrosive
	Palladium Soln.	A	Corrosive
	Zinc/Cobalt Chloride Solution	A	ORM-E
	Waste Nickel Soln.	A	Corrosive
	Lead Fluoride Sludge	A	ORM-B
	Laboratory Apparatus	A	ORM-E
	Stannous Sulfate Soln.	A	ORM-E
	Chelated Waste Cleaner	A	Corrosive
	Vacuum Pump Oil/ Inks	A	Combustible Liquid
Combustible Storage Area	Waste Mixed Solvents, Non- Chlorinated	A, C, D	Flammable/ Combustible Liquid
	Waste Mixed Solvents, Chlorinated	A, C, D	Flammable/ Combustible Liquid

Table 6 (Continued)

<u>Storage Area</u>	<u>Waste Stream</u>	<u>Container Type*</u>	<u>Hazard Class</u>
Flammable Material Storage Area	Waste Mixed Solvents, Non- Chlorinated	A,C,D	Flammable/ Combustible Liquid
	Waste Mixed Solvents, Chlorinated	A,C,D	Flammable/ Combustible Liquid
	Acetone	C	Flammable/ Combustible Liquid
	Methanol	C	Flammable/ Combustible Liquid
Metal Hydroxide/ Sulfide Sludge Storage Area	Metal Hydroxide/ Sulfide Sludge	E	ORM-E
Waste Storage Tanks	Copper Etchant	N.A.	Corrosive

*Container Codes:

- A 55-gallon drum, DOT specification 34.
- B 330-gallon polyethylene storage tote, DOT specification E-8225 and E-9052.
- C 5-gallon polyethylene container, DOT specification 34.
- D 55-gallon steel drum, DOT specification 17E.
- E 26-yd³ steel roll-off container.



* CASE-BY-CASE DECISION TO BE MADE BY MACDERMID, INC.

** In some instances, waste streams which fall within the allowable concentration may be rejected, case-by-case decision to be made by MacDermid, Inc.

*** Under no circumstances will MacDermid accept for treatment or storage wastes which are excluded by the permit.

FIGURE 1

Flow Diagram for Accepting
or Rejecting Used Surface
Finishing Chemicals From
Customers and Off-Site
MacDermid Facilities

Appendix 1

SAMPLE WASTE CHARACTERIZATION/VERIFICATION FORMS:

- o MacDermid's Generator Certification Package, for recycleable hazardous wastes being returned to MacDermid, Inc.
- o On-Site Generated Wastes (report form)
- o Generated Wastes - Spot Test (report form)

MacDermid's Generator Certification Package,
for recycleable hazardous wastes
being retured to MacDermid, Inc.



MacDermid
INCORPORATED

245 FREIGHT STREET · WATERBURY, CT 06702 · TELEPHONE (203) 575-5700 · TELEX 4436011 · INTL. FAX 203-575-7900 · DOM. FAX 203-575-5630

March 31, 1992

MacDermid, Inc. is authorized under Part A in Connecticut as a hazardous waste storage facility and has the capacity and the appropriate authorization to accept certain wastes for recycling generated from your facility. Should any of your manufacturing processes change so as to significantly alter the type of wastes, new waste identification forms must be submitted for approval.

Sincerely,

Cherrie D. Gillis
Manager, Environmental Affairs

CDG:dmb

RECEIVED

MAY 06 1993

DEP- Waste Management Bureau
Waste Engineering & Enforcement
Permits

3
August 14, 1991

Re: Recycle Agreement

Dear :

To better serve you in the area of recycling responsibility involving our recycled products, MacDermid Inc., (MacDermid) is asking for your cooperation. MacDermid, Waterbury is under Part A Interim Status and MacDermid, Ferndale is a Part B storage facility and can accept and recycle certain materials company ships as approved by MacDermid. ✓

3 To protect you and MacDermid with the tightening of Federal and State law and to maintain proper record keeping under RCRA regulations 40 CFR 262.11 Hazardous Waste Determination, 40 CFR 264.12 Required Notices, and 40 CFR 264.13 General Waste Analysis, we are implementing the following program:

1. Written Agreement - A written Agreement between you and MacDermid is enclosed showing warranties, indemnifications, and other requirements. Please read this carefully and sign it as indicated.
2. Return Parameters - Attached to the Agreement is our schedule showing return parameters for recycling as well as our Generator Certification Form which should be completed based on your specific recyclable material.
3. Customer Waste Analysis - Please return per waste stream, a 1 quart Waste Analysis sample to: Quality Control Laboratory, 526 Huntingdon Ave., Waterbury, CT 06708. Attn: Lisa Feret-Seymore.

Please return the written Agreement and Generator Certification Form to Cherrie Gillis, MacDermid Inc., 245 Freight Street, Waterbury, CT 06702. If you have any questions, please contact your MacDermid sales representative.

Sincerely,

3
ENCS.

Sample Shipments

10/92

MacDermid Incorporated, upon request, will supply an appropriate sample/shipping container for the sample. Please call our Special Packaging Department at (203) 575-5888.

Recommendations for Shipping Sample: Proper Shipping Name [1 quart/litre sample] under HM181:

Authorized Copper Etchant

Shipping Name: Caustic Alkali Liquids NOS (Cupric Chloride), 8, UN 1719, PG II

Package: 1 quart polypropylene bottle, fibreboard carton, Corrosive label

Solder Strippers 7595

Shipping Name: Oxidizing Substance Liquid, Corrosive NOS
(Ammonium Bifluoride/Hydrogen Peroxide) 5.1, UN 3098, PG II

Package: 1 quart polypropylene bottle, fibreboard carton, Oxidizer and Corrosive label

Solder Conditioner 7533/7526

Shipping Name: Hydrochloric Acid Solution, 8, UN 1789, PG II

Package: 1 quart polypropylene bottle, fiberboard carton

19054/1760/19656/12452/12404/12410 Electroless Copoper

Shipping Name: Non-Regulated Material

Package: 1 quart polypropylene bottle inside fibreboard carton

- Tape necks of bottle-filling 80% Full ONLY
- Inner Closures must be upward. Arrows must point in the correct upward direction on outside container.
- Inner container should be labeled as to contents, customer name, address, telephone number.

AGREEMENT

This Agreement, upon receipt by MacDermid, Incorporated (MacDermid) Waterbury, CT, of your acceptance as evidenced by your signature, shall be the Agreement between MacDermid and _____ ("Company") with respect to the provisions set forth below:

1. WASTE - The term "Waste" used herein refers to hazardous or non-hazardous material generated by Company and tendered to or received by MacDermid for recycling.
2. MACDERMID WARRANTY - MacDermid shall obtain all permits, licenses and other forms of documentation required in order to comply with all existing laws, ordinances and regulations of the United States and of any state, county, township or municipal sub-division thereof, or other governmental agency which are applicable to the transportation, treatment, storage or disposal of Waste by MacDermid; provided, however, that MacDermid shall not be responsible for performing duties imposed by law upon Company, including, but not limited to, completion of the generator's portion of the hazardous waste manifest, container labelling, packaging, testing and completion of notices relating to any land disposal prohibition.
3. MACDERMID INDEMNIFICATION - Except as provided in paragraphs 4 and 5 below, Company shall be relieved of responsibility for and MacDermid shall become responsible for, and shall indemnify and hold harmless Company from any and all liability, damages, costs -- including attorney fees and litigation expenses -- claims, demands, and expenses of whatever type or nature, including, but not limited to, costs of responding to environmental pollution, which shall be caused by or arise out of the Waste, as follows:
 - A. If MacDermid provides or arranges transportation, such obligation to indemnify shall commence upon departure from Company's facility, (except that MacDermid shall indemnify Company for damages, costs and expenses to the extent caused by MacDermid's actions or omissions during transfer of Waste to MacDermid tanker truck);
 - B. If Company provides or arranges transportation, such obligation to indemnify shall commence upon delivery F.O.B. MacDermid's facility.

This paragraph (3) shall not apply to the extent that any such liability, damages, costs, claims, demands, and expenses caused by or arising out of Waste, are caused by the failure of the Company to comply with the Warranty set forth in section 4 below and Schedule ____ attached hereto.

4. COMPANY WARRANTY - Company hereby represents and warrants that all Waste tendered or transported to MacDermid by Company shall meet the specifications set forth in Schedule ____, attached hereto and made a part hereof, and that such Waste has been thoroughly characterized on a Generator Certification form approved by MacDermid. It is understood and agreed that Company shall prepare and execute a

MacDermid Generator Certification form for each type of Waste, including any Waste resulting from process changes that could significantly alter its composition and/or chemical or physical properties. Company further represents and warrants that all such Waste shall be prepared for shipment, labelled and packaged and in containers specified by MacDermid, in accordance with applicable regulations of the United States Department of Transportation, United States Environmental Protection Agency and/or any federal, state, and/or local agency having jurisdiction. Company further represents and warrants that it shall be responsible for properly loading packaged Waste on MacDermid's trailers if MacDermid is providing transportation. Company shall be further liable for any damages, costs of expenses to the extent caused by Company's actions or omissions during transfer of Waste to MacDermid tanker truck.

5. Company Indemnification - MacDermid shall be relieved of responsibility for, and Company shall be solely responsible for, and shall indemnify and hold harmless MacDermid against any and all liability, damages, costs — including attorney fees and litigation expenses — claims, demands, and expenses of any type or nature, including, but not limited to, costs of responding to environmental pollution, which shall be caused by or arise out of the waste as follows:

- A. Prior to departure from Company's facility, if MacDermid provides or arranges transportation;
- B. Prior to delivery F.O.B. MacDermid's facility, if Company provides or arranges transportation.

Notwithstanding the foregoing, Company further agrees to indemnify and hold harmless MacDermid from any and all loss, claims, costs (including environmental response costs), and damages, including without limitation damages to natural resources, equipment, property or person, whether that of MacDermid or its employees or any Company or its employees, caused by or resulting in any way from the failure to comply with the warranty set forth in paragraph 4 above.

6. Notice, Right to Defend - In the event any liability, damages, cost, claim, demand or other expense is asserted by a third party against MacDermid or Company for which indemnification is sought under this Agreement, reasonable notice of such claim shall be given, and the party from whom indemnification is sought shall have the right (but not the obligation) to defend such claim.
7. MacDermid Rejection - Company agrees that MacDermid, upon notice to Company, has the absolute and unqualified right to reject any shipment of Waste not in conformity with Schedule ___ or not in the container specified by MacDermid. It is further agreed and understood that MacDermid reserves the right to reject any shipment of Waste if acceptance by MacDermid of said Waste would result in a violation of any law, statute, regulation, ordinance, permit, license or order of the United States, or any agency thereof, or of

13. Disclaimer - MacDermid Incorporated makes no representation that it will, in fact, recycle any Waste. MacDermid may send the Waste to another permitted facility for treatment, storage or disposal.
14. Previous Agreements - All previous representations, including, but not limited to, proposal(s), purchase order(s) and/or invoice(s), either written or oral, are hereby annulled and superseded. No modification of this Agreement shall be effective unless in writing and executed by MacDermid and Company.
15. Disclosure - The terms of this Agreement may be disclosed to any governmental agency.

ACCEPTED this _____ day of _____, 199__.

Date: _____

MACDERMID, INCORPORATED

By: _____
Cherrie Gillis
Manager, Regulatory Affairs

Date: _____

By: _____

Recycling Schedule of Parameters

Schedule: A Product Code: 19110/19140/19151
 Description of Material: Continuetch 9110/Ultra Etch 20/Ultra Etch 50

Recommended U.S. DOT description as waste for return : RQ Waste Caustic Alkali Liquids NOS (Cupric Chloride), 8, UN1719, PG II

EPA Waste Number(s): D002/D008*/D004*/D007* *Used when contaminant
 Applicable State Waste Number(s): CA-123 includes the Regulatory
 TX-as specified by the TX Waste Commission Limit

The spent material will be packaged by the Company as follows:

The spent material must be returned in the same container in which the fresh material was received. If the container is not in fit condition for return, call MacDermid, Inc. for instructions.

The returned material by the Company to MacDermid, Inc. must meet the following specifications:

Color: <u>Deep Blue</u>	Physical State at 75°F: <u>Liquid</u>
pH: <u>7.5-9.5</u>	Specific Gravity at 75°F: <u>1.16 Minimum</u>
Copper: <u>110 g/l Minimum</u>	Total Alkalinity: <u>7.65 - 11.0 M</u>
Chloride: <u>4 M Minimum</u>	
Nickel: <u>5 ppm Maximum</u>	Iron: <u>20 ppm Maximum</u>
Zinc: <u>1 g/l Maximum</u>	Tin: <u>100 ppm Maximum</u>
Chromium: <u>100 ppm Maximum</u>	Lead: <u>100 ppm Maximum</u>
	Arsenic: <u>50 ppm Maximum</u>

In addition to the parameters above, the Company shall not change the composition of the spent material in any way that would:

1. Cause the EPA Waste Number noted above to be changed, or additional EPA Waste Numbers to be added to those above, or
2. Cause MacDermid, Inc. to have to obtain any new permits, or to expand existing permits, in order to legally and properly receive and/or reclaim the spent material, or treat the effluent from said reclamation, or
3. Cause unforeseen damage to MacDermid, Inc. storage or process equipment, or cause MacDermid, Inc. to have to modify their reclamation process in order to properly reclaim the material.

The minimum fee to be charged by MacDermid, Inc. to the Company, upon rejection of any shipment of spent material, as provided in the attached agreement shall be a minimum of \$10.00/gallon.

In addition to this minimum charge shall be any costs incurred by MacDermid for hazardous waste disposal costs, damage to processes or equipment, or other costs resulting from the contamination of spent material.

Recycling Schedule of Parameters

Schedule: B Product Code: 19190
Description of Material: Ultra Etch FL

Recommended U.S. DOT description as waste for return : RQ Waste Caustic
Alkali Liquids NOS (Cupric Chloride), 8, UN1719, PG II

EPA Waste Number(s): D002/D008*/D004*/D00*7 *Used when contaminant
Applicable State Waste Number(s): CA-123 exceeds Regulatory
TX-as specified by the TX Waste Commission Limit

The spent material will be packaged by the Company as follows:

The spent material must be returned in the same container in which the
fresh material was received. If the container is not in fit condition
for return, call MacDermid, Inc. for instructions.

The returned material by the Company to MacDermid, Inc. must meet the following specifications:

Color: Deep Blue Physical State at 75°F: Liquid
pH: 7.5-9.5 Specific Gravity at 75°F: 1.13 Minimum

Copper: 104 g/l Minimum Total Alkalinity: 5.9 - 9.0 M
Chloride: 3.6 M Minimum

Nickel: 5 ppm Maximum Iron: 20 ppm Maximum Lead: 100 ppm Maximum
Zinc: 1 g/l Maximum Tin: 100 ppm Maximum Arsenic: 50 ppm Maximum
Chromium: 100 ppm Maximum

In addition to the parameters above, the Company shall not change the composition of the spent material in any way that would:

1. Cause the EPA Waste Number noted above to be changed, or additional EPA Waste Numbers to be added to those above, or
2. Cause MacDermid, Inc. to have to obtain any new permits, or to expand existing permits, in order to legally and properly receive and/or reclaim the spent material, or treat the effluent from said reclamation, or
3. Cause unforeseen damage to MacDermid, Inc. storage or process equipment, or cause MacDermid, Inc. to have to modify their reclamation process in order to properly reclaim the material.

The minimum fee to be charged by MacDermid, Inc. to the Company, upon rejection of any shipment of spent material, as provided in the attached agreement shall be a minimum of \$10.00/gallon.

In addition to this minimum charge shall be any costs incurred by MacDermid for hazardous waste disposal costs, damage to processes or equipment, or other costs resulting from the contamination of spent material.

Recycling Schedule of Parameters

Schedule: E Product Code: 17595
 Description of Material: MacDermid Solder Stripper 7595

Recommended U.S. DOT Description as waste: Waste Oxidizing Substance Liquid, Corrosive
 NOS (Hydrogen Peroxide/Ammonium Bifluoride) 5.1, UN3098, PG II

EPA Waste Number(s): D001/D002/D008
 Applicable State Waste Number(s): CA-724, 131

The spent material will be packaged by the Company as follows:

The spent material must be returned in the same container in which the fresh material was received. If the container is not in fit condition for return, call MacDermid, Inc. for instructions. NOTE: The material shall be shipped and MUST BE returned with vented caps on the drums. These vents must be clear to allow ventilation of the material.

The returned material by the Company to MacDermid, Inc. must meet the following specifications:

Color: <u>Blue, Blue Green</u> <u>or Light Brown</u> pH: <u>3.5 to 6.0</u>	Physical State at 75°F: <u>Liquid</u> Specific Gravity at 75°F: <u>1.08 Minimum</u>
Copper: <u>5 g/l Maximum</u> Chloride: <u>500 ppm Maximum</u> Fluoride: <u>110 g/l Maximum</u> Nickel: <u>5 ppm Maximum</u>	Total Organic Carbon: <u>< 1500 ppm</u> Peroxide: <u>4% Maximum</u> Tin: <u>22.5 g/l Maximum</u> Lead: <u>75 ppm Maximum</u>

Possible Contaminants:

Process Contamination:

Fluoborate: 5 ppm Maximum Iron: 100 ppm Maximum Nitrates: 5 ppm

In addition to the parameters above, the Company shall not change the composition of the spent material in any way that would:

1. Cause the EPA Waste Number noted above to be changed, or additional EPA Waste Numbers to be added to those above, or
2. Cause MacDermid, Inc. to have to obtain any new permits, or to expand existing permits, in order to legally and properly receive and/or reclaim the spent material, or treat the effluent from said reclamation, or
3. Cause unforeseen damage to MacDermid, Inc. storage or process equipment, or cause MacDermid, Inc. to have to modify their reclamation process in order to properly reclaim the material.

The minimum fee to be charged by MacDermid, Inc. to the Company, upon rejection of any shipment of spent material, as provided in the attached agreement shall be a minimum of \$10.00/gallon.

In addition to this minimum charge shall be any costs incurred by MacDermid for hazardous waste disposal costs, damage to processes or equipment, or other costs resulting from the contamination of spent material.

Land Ban Material:
See Attached Restrictions

Recycling Schedule of Parameters

Schedule: F Product Code: 17526
Description of Material: MacDermid Ultra-Brite 7526
Recommended U.S. DOT Description as waste for return: Waste Hydrochloric Acid Solution, 8, UN1789, PG II
EPA Waste Number(s): D008/D002
Applicable State Waste Number(s): N/A

The spent material will be packaged by the Company as follows:

The spent material must be returned in the same container in which the fresh material was received. If the container is not in fit condition for return, call MacDermid, Inc. for instructions.

The returned material by the Company to MacDermid, Inc. must meet the following specifications:

Color: Yellow to Water White
pH: <2.0

Physical State at 75°F: Liquid
Specific Gravity: 1.06 to 1.10

Copper: 2 g/l Maximum
Chloride: 2.0 N Minimum

Acidity: 0.75 M Minimum

Fluoborate: 5 ppm Iron: 100 ppm Maximum Sulfates: 2500 ppm Maximum
Fluoride: 10 ppm Maximum Titanium Attack: 20 mils/year Maximum
Nickel: 5 ppm Maximum

In addition to the parameters above, the Company shall not change the composition of the spent material in any way that would:

1. Cause the EPA Waste Number noted above to be changed, or additional EPA Waste Numbers to be added to those above, or
2. Cause MacDermid, Inc. to have to obtain any new permits, or to expand existing permits, in order to legally and properly receive and/or reclaim the spent material, or treat the effluent from said reclamation, or
3. Cause unforeseen damage to MacDermid, Inc. storage or process equipment, or cause MacDermid, Inc. to have to modify their reclamation process in order to properly reclaim the material.

The minimum fee to be charged by MacDermid, Inc. to the Company, upon rejection of any shipment of spent material, as provided in the attached agreement shall be a minimum of \$10.00/gallon.

In addition to this minimum charge shall be any costs incurred by MacDermid for hazardous waste disposal costs, damage to processes or equipment, or other costs resulting from the contamination of spent material.

MACDERMID INCORPORATED
Waterbury, Connecticut 06702
(203) 575-5700
GENERATOR PROFILE CERTIFICATION

For Schedule: _____

Instructions: This profile must be completely filled out or it will be subject to delay in acceptance or rejection. You may use
 N/A for "Not Applicable" or Unk. for "Unknown"

MACDERMID INCORPORATED
 Waterbury, Connecticut
 EPA NO. CTD001164599
 Status: Storage Facility

MACDERMID INCORPORATED
 Ferndale, Michigan
 EPA NO. MID005338371
 Status: Storage Facility

This Certification is to be completed by the Generator for each type of recyclable material shipped to Waterbury, CT or Ferndale, MI.
 APPROVAL MUST BE GIVEN PRIOR TO FIRST SHIPMENT.

A. Generator Name: _____ B. Waste Description: _____
 Address: _____
 Technical Contact: _____ EPA Waste No.: _____
 Telephone No.: _____ CT Regulated Waste No.: _____
 Facility EPA ID No.: _____

C. Typical Characteristics of Waste

Color: _____ Sp. Gravity: _____
 Odor: _____ Flash Point: _____
 Physical State @ 70F: _____ pH: _____
 Layers: _____

D. Check Items Suspected to be present**E. Other Components****F. Solvents**

No	Yes	No	Yes	No	Yes	No	Yes	No <input type="checkbox"/>	Yes <input type="checkbox"/>
Antimony	_____	_____	Selenium	_____	_____	Copper	_____	_____	
Arsenic	_____	_____	Silver	_____	_____	Iron	_____	_____	
Beryllium	_____	_____	Thallium	_____	_____	Nickel	_____	_____	Name: _____
Cadmium	_____	_____	Phenols	_____	_____	Tin	_____	_____	
Lead	_____	_____	PCB's	_____	_____	Zinc	_____	_____	
Mercury	_____	_____	Dioxins	_____	_____	Cyanide	_____	_____	
Herbicides	_____	_____	Pesticides	_____	_____	Fluoride	_____	_____	
Barium	_____	_____	Chromium-Hex	_____	_____				

G. Typical Chemical Composition**H. Other Contaminants****I. Anticipated Volume**

%	%
_____	_____
_____	_____
_____	_____
_____	_____

Bulk: // _____/mo. _____/yr.
 Drums: // _____/mo. _____/yr.

I certify that all information submitted in this and any attached documents is complete, accurate, and that all known or suspected hazards have been disclosed.

Authorized Signature _____

Title _____

Date _____



MacDermid
INCORPORATED

245 FREIGHT STREET - WATERBURY, CT 06702 - TELEPHONE (203) 575-5700 - TELEX 4436011 - INTL. FAX 203-575-7900 - DOM. FAX 203-575-5630

MEMO TO: MACDERMID CUSTOMERS - ENVIRONMENTAL MANAGERS
FROM: Cherrie D. Gillis, Compliance Administrator
DATE: October 4, 1990
SUBJECT: THIRD-THIRD LAND BAN
(Return of Recyclable Materials To A
MacDermid Storage Facility)

1. Third-Third Land Ban

Effects: Copper Etchant
Solder Stripper
Solder Conditioner
NMP*
9204*
Electroless Copper *

* Non-restricted waste certification.

2. TCLP (Toxicity Characteristic Leaching Procedures)

1. The EPA issued on May 8, 1990 (EFFECTIVE AUGUST 8, 1990) the Third-Third Land Ban disposal regulations. These regulations are applicable to treatment facilities and companies that generate greater than 100 kg of hazardous waste in a calendar month. They prohibit disposal of hazardous waste unless the waste meets specified treatment standards or is placed in an EPA-approved no-migration unit.

MacDermid, Inc. recycles certain hazardous waste material and under RCRA regulations, a land ban certification must accompany every manifest on a returned shipment to a MacDermid facility.

MacDermid, Inc. has formatted a land ban certification for your use. Our recommendations showing the waste codes and treatment standards are based on what the waste material should fall under as per the Recycling Schedule of Parameters. Page 1 and 2, as applicable to the category, must be completed in full & signed.

2. TCLP: (EFFECTIVE SEPTEMBER 25, 1990). EPA has included a new requirement for generators to determine all the characteristic "D" codes that apply to their wastes and re-characterize them where necessary. This requirement applies even if your waste has been listed previously as a F, K, U, or P code OR single or multiple "D" code. The revised "Characteristic" list for toxicity is attached.

Category II

Generator Name: ABC Company

Address: 1 Plaza Street

EPA I.D. Number: CTD000111222

Dobbs, CT

Manifest No.: CTF123456

If your waste falls into any category other than what is stated below, call MacDermid's Regulatory Department prior to shipment.

0 0 0 0 0 0

Refer to 268.42 Technology-Based Standards - Table 2

Waste Code Legend	Waste Code	Waste Description and/or Treatment Subcategory	Technology Code Wastewater/ Non-wastewater	
a	D001	- Oxidizers based on 261.21 (a) (4)	DEACT	DEACT
b	D002	- Acid Subcategory based on 261.22 (a) (1)	DEACT	DEACT
c	D002	- Other Corrosives based on 261.22 (a) (2)	DEACT	DEACT
d	D002	- Alkaline Subcategory based on 261.22 (a)(1)	DEACT	DEACT

0 0 0 0 0 0

Refer to 268.43 Constituent Concentration in Waters - Table CCW

		Waste Description and/or Treatment Subcategory	Treatment Standard Wastewater/ Non-wastewater	
e	D004	Arsenic	5.0 mg/l	N/A
f	D008	Lead	5.0 mg/l	N/A
g	D007	Chromium	5.0 mg/l	N/A

RESTRICTED WASTE CERTIFICATION/NOTIFICATION: I certify/notify under penalty of law, that I personally have examined and am familiar with the waste through analysis and testing or through knowledge of the waste to support this certification that the waste does not comply with treatment standards specified in 40 CFR 268, Subpart D. This waste must be treated by the appropriate regulatory treatment standard or in such a manner which renders it non-liquid or chemical fixation or solidification prior to land disposal. I also certify that the following waste code(s) apply to my waste.

The following must be completed by the generator for each manifested shipment containing restricted waste. Please check the appropriate boxes for your particular waste.

Treatment Standard - 40 CFR

Waste (Product) Name	Waste Code(s)	Waste Code Legend	Table 2 268.42	Table CCW 268.43	Waste Water	Non Waste Water
9110/UE50, etc.	D001/D002	c/e/f/o	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
7526/7533	D002/D008	b/f	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
7595	D001/D002/D008	a/b/f	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Signature: Bob MacDermid

Date: 10/10/91

Print Name: Bob MacDermid

Title: Env. Manager

MacDermid, Inc. believes the following to be accurate based on its knowledge and/or testing of spent material. Ultimate knowledge and/or testing will be the responsibility of the generator.

<u>Recyclable Product as Spent</u>	<u>TOC</u>	<u>TSS</u>	<u>W/NW</u>	<u>"D" Characterization</u>
Copper Etchant	<1%	<1%	W	D002 and/or D008* D004*/D007*
Solder Stripper 7595	<1%	<1%	W	D001/D002/D008
Solder Conditioner 7526/7533	<1%	<1%	W	D002/D008
9204	<1%	<1%	W	CR04
NMP	<1%	<1%	W	CR04
Electroless Copper (As returned under strict MacDermid parameters)	<1%	<1%	W	CR04

*Lead, arsenic and/or chromium content varies with usage.

268.42 Technology-Based Standards by RCRA Waste Code

Table 2		Technology	
<u>Waste Code</u>	<u>Waste Description and/or Treatment Subcategory</u>	<u>Code</u>	
		<u>W</u>	<u>NW</u>
a. D001	Oxidizers based on 261.21 (a) (4)	DEACT	DEACT
b. D002	Acid subcategory based on 261.22 (a) (1)	DEACT	DEACT
c. D002	Other Corrosives based on 261.22 (a) (2)	DEACT	DEACT
d. D002	Alkaline subcategory based on 261.22 (a) (1)	DEACT	DEACT

268.43 Constituent Concentrations in Wastes

Table CCW		Mg/l	
		<u>W</u>	<u>NW</u>
e. D004	Arsenic	5.0	N/A
f. D008	Lead	5.0	N/A
g. D007	Chromium	5.0	N/A

The generator, must decide whether treatment standard(s) is applicable to the recyclable waste. If there is any treatment standard other than what appears above, call MacDermid prior to shipment (203) 575-7947.

Category II

Generator Name: _____

Address: _____

EPA I.D. Number: _____

Manifest No.: _____

If your waste falls into any category other than what is stated below, call MacDermid's Regulatory Department prior to shipment.

o o o o o o

Refer to 268.42 Technology-Based Standards - Table 2

Waste Code Legend	Waste Code	Waste Description and/or Treatment Subcategory	Technology Code Wastewater/ Non-wastewater	
a	D001	- Oxidizers based on 261.21 (a) (4)	DEACT	DEACT
b	D002	- Acid Subcategory based on 261.22 (a) (1)	DEACT	DEACT
c	D002	- Other Corrosives based on 261.22 (a) (2)	DEACT	DEACT
d	D002	- Alkaline Subcategory based on 261.22 (a)(1)	DEACT	DEACT

o o o o o o

Refer to 268.43 Constituent Concentration in Waters - Table CCW

		Waste Description and/or Treatment Subcategory	Treatment Standard Wastewater/ Non-wastewater	
e	D004	Arsenic	5.0 mg/l	N/A
f	D008	Lead	5.0 mg/l	N/A
g	D007	Chromium	5.0 mg/l	N/A

RESTRICTED WASTE CERTIFICATION/NOTIFICATION: I certify/notify under penalty of law, that I personally have examined and am familiar with the waste through analysis and testing or through knowledge of the waste to support this certification that the waste does not comply with treatment standards specified in 40 CFR 268, Subpart D. This waste must be treated by the appropriate regulatory treatment standard or in such a manner which renders it non-liquid or chemical fixation or solidification prior to land disposal. I also certify that the following waste code(s) apply to my waste.

The following must be completed by the generator for each manifested shipment containing restricted waste. Please check the appropriate boxes for your particular waste.

Treatment Standard - 40 CFR

Waste (Product) Name	Waste Code(s)	Waste Code Legend	Table 2 268.42	Table CCW 268.43	Waste Water	Non Waste Water
_____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
_____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
_____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
_____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
_____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Signature: _____

Date: _____

Print Name: _____

Title: _____

MAXIMUM CONCENTRATION OF CONTAMINANTS FOR THE TOXICITY
CHARACTERISTIC (TCLP)

<u>EPA HW NUMBER</u>	<u>CONTAMINANT</u>	<u>REGULATORY LEVEL (MG/L)</u>
D004	Arsenic	5.0
D005	Barium	100.0
D006	Cadmium	1.0
D007	Chromium	5.0
D008	Lead	5.0
D009	Mercury	0.2
D010	Selenium	1.0
D011	Silver	5.0
D012	Endrin	0.02
D013	Lindane	0.4
D014	Methoxychlor	10.0
D015	Toxaphene	0.5
D016	2,4-D	10.0
D017	2,4,5-TP (Silvex)	1.0
D018	Benzene	0.5
D019	Carbon tetrachloride	0.5
D020	Chlordane	0.3
D021	Chlorobenzene	100.0
D022	Chloroform	6.0
D023	o-Cresol	200.0
D024	m-Cresol	200.0
D025	p-Cresol	200.0
D026	Cresol	200.0
D027	1,4-Dichlorobenzene	7.5
D028	1,4-Dichloroethane	0.5
D029	1,1-Dichloroethylene	0.7
D030	2,4-Dinitrotoluene	0.13
D031	Heptachlor (and its hydroxide)	0.008
D032	Hexachlorobenzene	0.13
D033	Hexachlorobutadiene	0.5
D034	Hexachloroethane	3.0
D035	Methyl ethyl ketone	200.0
D036	Nitrobenzene	2.0
D037	Pentachlorophenol	100.0
D038	Pyridine	5.0
D039	Tetrachloroethylene	0.7
D040	Trichloroethylene	0.5
D041	2,4,5-Trichlorophenol	400.0
D042	2,4,5-Trichlorophenol	2.0
D043	Vinyl Chloride	0.2

As of AUGUST 7, 1990, treatment facilities are not permitted by EPA to accept wastes unless all "D" characteristics are fully identified and certified by the generator. (40 CFR 262.11, 264.13, 265.13, 268.7).

There are two options available for certification for TCLP:

1. Generator may use knowledge or a known analysis to determine "D" characteristics and certify the same to the treatment facility. The customer may also have the material analyzed for toxicity which must be done under the Toxicity Characteristic Leaching Procedure which has replaced the Extraction Procedure (EP) leach test.
2. The treatment facility can sample and analyze your waste upon receipt. Since MacDermid is a Storage Facility under RCRA, it will REQUIRE GENERATORS TO USE EITHER their "knowledge" of the wastes, a known analysis or TCLP to determine "D" characteristics as confirmation to MacDermid's recommendations. MacDermid does not do TCLP testing.

NOTE: Land ban notification forms and any analysis you have, must be maintained for a minimum of five (5) years.

The following information/recommendations may deviate slightly from customer to customer depending on their use of MacDermid's recyclable product(s). Although MacDermid recycles/reclaims and does not treat waste for disposal purposes, the land ban certification does pertain to its customers who ship to a MacDermid Storage Facility.

The treatment standards (both concentration-based and specified methods) are generally presented as applicable to wastewater or non-wastewater.

Definition: o Wastewaters (W)

Wastes (listed wastes, including wastes generated as a result of the mixture and derived-from rule) that contain less than 1% total organic carbon (TOC) and less than 1% total suspended solids (TSS) except for...

o Non-Wastewater (NW)

Are those wastes that do not meet the above criteria, are defined as non-wastewaters and these contain greater than or equal to 1% TOC and greater than or equal to 1% TSS.

The generator, must decide whether the waste is a wastewater or non-wastewater and so notify MacDermid on the "Notification/Certification sheet.

MACDERMID, INCORPORATED CUSTOMER NOTIFICATION AND CERTIFICATION LAND DISPOSAL RESTRICTIONS COMPLIANCE

This form meets the standard for generator restricted waste notification to MacDermid as required by 40 CFR Part 268.7.

Generator Name: _____

Address: _____

EPA I.D. Number: _____

Name of Waste Material(s): _____

Manifest No.: _____

Waste Analysis Available No ☐ Yes ☐
If yes, please attach.

DIRECTIONS FOR COMPLETING THE THIRD-THIRD LAND BAN NOTIFICATION/CERTIFICATION

This form must be used Effective August 8, 1990 with all manifested shipments to a MacDermid facility. Front and back (pg. 1 and 2) must be completed.

If the waste material falls into any waste code category other than what is stated on this form, please call MacDermid's Regulatory Department prior to shipment (203) 575-7947.

- **Category I [See below, must be completed]**

Category I reflects waste material that is not restricted by the EPA from land filling. The waste numbers that would fall into this category would be the State Regulated wastes as "CR04". Category I "UNRESTRICTED" should be completed if your waste falls into this category.

- **Category II [Page 2 must be completed]**

Category II reflects waste material that is restricted from land filling and has been given a treatment standard by EPA. This section should be completed if your waste falls into this category.

Since MacDermid ONLY ACCEPTS for recycling certain spent materials, page 2 reflect those acceptable categories that MacDermid will receive for recycling.

Category I

UNRESTRICTED WASTE CERTIFICATION/NOTIFICATION: I certify/notify under penalty of law, that I personally have examined and am familiar with the waste through analysis and testing or through knowledge of the waste to support this certification that the waste is not restricted as specified in 40 CFR 268, Subpart D and all applicable prohibitions set forth in 40 CFR 268.32 or RCRA Section 3004 (d). I also certify that the following waste code(s) apply to this waste.

Waste (Product) Name

Waste Code(s)

Signature: _____

Date: _____

Print Name: _____

Title: _____

MACDERMID, INCORPORATED CUSTOMER NOTIFICATION AND CERTIFICATION LAND DISPOSAL RESTRICTIONS COMPLIANCE

This form meets the standard for generator restricted waste notification to MacDermid as required by 40 CFR Part 268.7.

Generator Name: ABC Company

Address: 1 Plaza Street

EPA I.D. Number: CTD000111222

Dobbs, CT

Name of Waste Material(s): 9110, etc.

Manifest No.: CTF123456

Waste Analysis Available No ☒ Yes ☐
If yes, please attach.

DIRECTIONS FOR COMPLETING THE THIRD-THIRD LAND BAN NOTIFICATION/CERTIFICATION

This form must be used Effective August 8, 1990 with all manifested shipments to a MacDermid facility. Front and back (pg. 1 and 2) must be completed.

If the waste material falls into any waste code category other than what is stated on this form, please call MacDermid's Regulatory Department prior to shipment (203) 575-7947.

- **Category I [See below, must be completed]**

Category I reflects waste material that is not restricted by the EPA from land filling. The waste numbers that would fall into this category would be the State Regulated wastes as "CR04". Category I "UNRESTRICTED" should be completed if your waste falls into this category.

- **Category II [Page 2 must be completed]**

Category II reflects waste material that is restricted from land filling and has been given a treatment standard by EPA. This section should be completed if your waste falls into this category.

Since MacDermid ONLY ACCEPTS for recycling certain spent materials, page 2 reflect those acceptable categories that MacDermid will receive for recycling.

Category I

UNRESTRICTED WASTE CERTIFICATION/NOTIFICATION: I certify/notify under penalty of law, that I personally have examined and am familiar with the waste through analysis and testing or through knowledge of the waste to support this certification that the waste is not restricted as specified in 40 CFR 268, Subpart D and all applicable prohibitions set forth in 40 CFR 268.32 or RCRA Section 3004 (d). I also certify that the following waste code(s) apply to this waste.

Waste (Product) Name

Waste Code(s)

Electroless Copper

CR04-CT/ 001D-MI

Signature: Bob Manager

Date: 10/10/91

Print Name: Bob Manager

Title: Env. Manager

E F F E C T I V E I M M E D I A T E L Y

ALL waste manifested shipments being returned to MacDermid, Inc. in Waterbury, CT will require the following:

PRIOR TO ANY SHIPMENT, NON-MACDERMID CARRIERS

MUST CALL MACDERMID AND ARRANGE AN APPOINTMENT

WITH THE RECEIVING DEPARTMENT.

All waste containers are being spot tested upon arrival at MacDermid. Rejected material is being returned via the same carrier to the customer at customer's expense.

If was received from a customer is returned to MacDermid via a MacDermid vehicle and rejected during the spot test, and the MacDermid vehicle is not scheduled for return to the customer's area, MacDermid will offer the rejected material to another permitted carrier at customer's expense.

Cherrie Gillis
Manager Regulatory Affairs

CG:dmb

On-Site Generated Waste (report form)

ON-SITE GENERATED WASTES

SECTION
04.13

WASTE _____

TSDF _____ REF: NO: _____

SOURCE: _____

CHARACTERISTICS

EQUIPMENT USED TO ANALYZE

Waste Nos: _____

Color: _____

pH Meter: _____

Odor: _____

SP.GR: (Hydrometer): _____

pH: _____

Fl. Pt. (Tag CC ASTM D56-64, 1968)

Sp. Gr.: _____

Gas Chromatography: _____

Fl. Pt.: _____

A.A. Spectrophotometry: _____

Layering: _____

Wet Analysis (Titration): _____

Frequency of Sampling: _____

Method of Collection: _____

Land-Ban: Yes _____ No _____

METALS & CONC: _____

_____COMPOSITION: _____

_____RATIONALE: _____

Generated Wastes - Spot Test (report form)

GENERATED WASTE - SPOT TEST

WASTE ID NO: _____
(3 digits)

DEPARTMENT: _____

DEPT. ACCT. NUMBER WASTE TO BE
CHARGED TO: _____

WASTE NAME: _____

TYPE SAMPLE: GRAB
COMPOSITE
RANDOM

.....

CHARACTERISTICS

RESULTS

SPECIFICATIONS

Odor

Color

pH

Sp. Gravity

Flash Point

Metals Run if Applicable

Tin

Lead

Iron

Copper

Zinc

Cadmium

Other _____

Solvents:

I certify this waste is within specification of the written waste analysis plan for on-site generated wastes per waste ID number.

(Signature)

Date: _____

Appendix 2

A DESCRIPTION OF THE INTERNAL WASTE TRACKING SYSTEM

INTERNAL WASTE TRACKING SYSTEM TO BE UTILIZED FOR WASTES
GENERATED ON-SITE WHICH ARE TO BE PLACED IN THE SATELLITE STORAGE
AREAS OR THE PERMITTED HAZARDOUS WASTE MANAGEMENT AREAS.

The following internal waste tracking procedure shall be utilized to ensure proper waste characterization and allow for waste transfer from the on-site generating department or area to the on-site waste management area (a satellite storage area or the permitted hazardous waste management area).

1. Each container to be utilized to collect a specific waste material generated on-site shall be pre-labeled with a waste label which will identify the Department of Transportation (DOT) classification/name of the waste being generated and a MacDermid 3-digit identification number specific to that waste stream.
2. Each container will have a document attached to it for MacDermid personnel to identify:
 - a. Name or initials of personnel;
 - b. Date; and
 - c. Name of the waste material being placed in the container.
3. Prior to the storage and shipment off-site of each container, a copy of the container document will be submitted to the Regulatory Department for profile verification of the required waste characterization or waste verification parameters as identified in item number 4 and 5, respectively below.
4. All first time waste streams shall be characterized on a Treatment, Storage, Disposal Facility (TSDF) generator profile by one or more of the following methods:
 - a. From formulations;
 - b. By a raw material from vendor, use of vendor MSDS;
 - c. Knowledge of waste constituents as generated by personnel plus testing in accordance with Table 3 for confirmation where applicable; and/or
 - d. Testing as required if waste constituents and/or physical characteristics are unknown. Testing would conform to TSDF profile requirements and Table 3.
5. Upon the subsequent generation of a waste stream the facility shall perform waste verification in accordance with Table 3 as applicable to ensure that the facility 3-digit identification number is correct for the waste stream.

Appendix 3

SPOT TESTING PROCEDURES

TABLE 5.11

SPOT TEST PROCEDURES FOR USED SURFACE FINISHING CHEMICALS

MacDermid, Inc.
526 Huntingdon Avenue
Waterbury, Connecticut

Chemical

Electroless Copper

Spot Test Format

Equipment:

1. Standard laboratory equipment

Reagents:

1. Red litmus paper

Procedures:

1. Appearance

Obtain a representative sample of material to be tested. Decant approximately 150 ml. sample into a 250 ml. beaker. Examine solution for color, turbidity, and extraneous material.

2. pH

Using a pH meter standardized with pH 4 buffer, obtain and record a pH value for the sample.

3. Liberated Ammonia

- a. Add 2.0 g NaOH crystals to plastic beaker containing 20 ml. of spent solution. Suspend a moist piece of litmus and cover with a watch glass.
- b. Wait a minute. If the paper turns blue, test is positive.

TABLE 5.11 (continued)

SPOT TEST PROCEDURES FOR USED SURFACE FINISHING CHEMICALS

MacDermid, Inc.
526 Huntingdon Avenue
Waterbury, Connecticut

Chemical

Solder Stripper

Spot Test Format

Equipment:

1. Standard laboratory equipment
2. pH meter

Reagents:

1. Red litmus paper
2. Sodium hydroxide (NaOH) crystals
3. pH paper

Procedures:

1. Appearance

Obtain a representative sample of material to be tested. Decant approximately 150 ml. sample into a 250 ml. beaker. Examine solution for color, homogeneity and extraneous material.

2. pH

Using pH paper, obtain and record a pH value for the sample.

3. Free Ammonia

Wave a moistened piece of red litmus paper over incoming drum. If paper remains red, test is negative.

4. Liberated Ammonia

- a. Add 2.0 g NaOH crystals to plastic beaker containing 20 ml. of spent solution. Suspend a moist piece of litmus and cover with a watch glass.
- b. Wait a minute. If the paper turns blue, test is positive.

TABLE 5.11 (continue):

SPOT TEST PROCEDURE FOR USED SURFACE FINISHING CHEMICALS

MacDermid, Inc.
526 Huntingdon Avenue
Waterbury, Connecticut

Chemical

NMP

Spot Test Format

Equipment:

1. Standard laboratory equipment
2. Refractometer

Procedures:

1. Appearance

Decant approximately 250 ml. of the sample into a 500 ml. beaker. Examine solution for color, clarity, and extraneous material.

Allow sample to sit for one hour and reexamine. No phase separation should be evident.

2. Specific Gravity

Fill a tared 100 ml. volumetric flask with sample and weigh to the nearest 0.1 g.

Calculation: $\frac{\text{Sample Weight (g)}}{100} = \text{Specific Gravity}$

3. Water Content

Heat or cool approximately 50 ml. of the sample to 25°C.

Vacuum filter the sample into a clean, dry receiver. Make sure all filter apparatus is dry prior to filtration.

Determine refractive index to 4 decimal places with refractometer.

TABLE 5.11 (continued)

SPOT TEST PROCEDURES FOR USED SURFACE FINISHING CHEMICALS

MacDermid, Inc.
526 Huntingdon Avenue
Waterbury, Connecticut

Chemical

Solder Conditioner

Spot Test Format

Equipment:

1. Standard laboratory equipment
2. pH meter
3. Water bath
4. Ret litmus paper

Reagents:

1. NaOH crystals

Procedures:

1. Appearance

Obtain a representative sample of material to be tested. Decant approximately 150 ml. sample into a 250 ml. beaker. Examine solution for color, homogeneity and extraneous material.

2. pH

Using a pH meter standardized with pH 4 buffer, obtain and record a pH value for the sample.

3. Liberated Ammonia

- a. Add 2.0 g NaOH crystals to plastic beaker containing 20 ml. of spent solution. Suspend a moist piece of litmus and cover with a watch glass.
- b. Wait a minute. If the paper turns blue, test is positive.

TABLE 5.11 (continued)

SPOT TEST PROCEDURES FOR USED SURFACE FINISHING CHEMICALS

MacDermid, Inc.
526 Huntingdon Avenue
Waterbury, Connecticut

Chemical

Copper Etchant

Spot Test Format

Equipment:

1. Standard laboratory equipment

Reagents:

1. Red litmus paper

Procedures:

1. Appearance

Obtain a representative sample of material to be tested. Decant approximately 150 ml. sample into a 250 ml. beaker. Examine solution for color, turbidity and extraneous material.

2. Specific Gravity

Place digital density meter probe in drum and record specific gravity measurement once the reading has stabilized.

3. Free Ammonia

Wave a moistened piece of red litmus paper over incoming drum. If paper turns blue, the drum has tested positive for ammonia.